TRANSCRIPT OF RECORD.

SUPREME COURT OF THE UNITED STATES.

No. 123.

JOHN DUNBAR AND JEREMIAH HOPPER, APPELLANTS,

vs.

MARGARET MYERS, EXECUTRIX, &C., AND EUGENE S. EUNSON.

APPEAL FROM THE CIRCUIT COURT OF THE UNITED STATES FOR THE SOUTHERN DISTRICT OF NEW YORK.

FILED OCTOBER 12, 1875.

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1 The President of the United States to John Dunbar & Jeremiah Hopper, greeting:

You are hereby commanded that you and each of you personally appear before the judges of the circuit court of the United States of America for the southern district of New York, in the second circuit court, in equity, on the first Monday of June, A. D. 1870, wherever the said court shall then be, to answer a bill of complaint exhibited against you in the said court by John Myers & al. and to do further and receive what the said court shall have considered in that behalf. And this you are not to omit under the penalty on you and each of you of two hundred and fifty dollars.

Witness, Hon. Salmon P. Chase, Chief Justice of the Supreme Court of the United States, at the city of New York, on the 26th day of April, in the year one thousand eight hundred and seventy, and of the Independence of the United States of America the ninety-

KENNETH G. WHITE, *Clerk.*

MATHEWS & BETTS, *Solr.*

The defendants are required to enter appearance in the above cause in the clerk's office of this court on or before the first Monday of June, 1870, or the bill will be taken pro confesso against them.

K. G. W., *Clerk.*

2 (Endorsed:) I hereby certify that on the 28th day of April, 1870, at , in my district, I personally served the within subpœna upon the within-named Jeremiah Hopper, by exhibiting to him the within original, with the seal of the court thereon, and at the same time leaving with him a copy thereof.

Dated New York, April 28, 1870.

GEO. H. SHARPE,
U. S. Marshal S. District of N. Y.

J. E. K. Served personally on the within-named defendant, Jeremiah Hopper, April 28th, 1870. Filed June 4, '70.

3 To the honorable the justices of the circuit court of the United States for the circuit within and for the southern district of New York, in equity:

John Myers, Eugene S. Eunson, of the city and county of New York, State of New York, citizen' of the United States, bring this their bill against John Dunbar and Jeremiah Hopper, of the city of New York, county of New York, State of New York.

And thereupon your orators complain and say that heretofore, and before the twenty-third of May, 1854, the said John Myers and one Robert G Eunson, being then citizens of the United States, were the true, original and first inventors or discoverers of a certain new and useful invention, to wit, an improved machine for sawing thin boards, &c., and that the said invention was not known or used by others before their invention or discovery thereof, and was not, at the time of the application for letters-patent therefor, in public use or on sale with the consent or allowance of the said Myers and said Robert G. Eunson, as the inventors or discoverers thereof, contrary to the provisions of the statutes of the United States in such case made and provided.

That, being such inventors, your orators, the said Myers and said Robert G. Eunson, made application in writing to the Commissioner of Patents of the United States for the granting of letters-patent for said

invention, and accompanied the same with a written description of the said invention or discovery, and the manner and process of making and using the same, in such full, clear, and exact terms as to enable any person skilled in the art or science to which the said invention or discovery appertains, or with which it is most nearly connected, to make and use the same, and with a specification of the parts and improvements and combination which they claimed as their invention, and with drawings and models and written references explaining the said invention or discovery, and explaining the principle and the mode in which they contemplated the application of the principle by which it might be distinguished from other inventions; which said description was signed by your orator', the said John Myers and said Robert G. Eunson, and attested by two witnesses, and filed in the Patent-Office.

That your orators, the said Myers and said Robert G. Eunson made oath that they verily believed that they then were the original and first inventors or discoverers of the invention or discovery for which they then solicited a patent, and that they did not know or believe that the same was ever before known or used; and also, that they then were citizens of the United States.

And your orators, the said Myers and said Robert G. Eunson, at the same time paid into the Treasury of the United States the sum of thirty dollars, and received a receipt therefor, and then and there also duly complied in all other respects with all the necessary conditions and requirements of the statutes of the United States in such case made and provided prior to the granting of the letters-patent hereinafter mentioned.

That on the 23d day of May, 1854, letters-patent of the United States, bearing date on that day, were issued to your orators, the said John Myers and said Robert G. Eunson, according to law, whereby there was granted to them, their heirs, executors, administrators, or assigns, for the term of fourteen years, from the 23d day of May, 1854, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the invention or discovery aforesaid, description whereof was given in the words of your orators, the said Myers and said Robert G. Eunson, in the said schedule annexed to the said letters-patent, and was made part of the same.

That the said letters-patent were issued in the name of the United States of America, and were sealed with the seal of the Patent-Office of the United States, and were signed by the Secretary of the Interior, and were countersigned by the Commissioner of Patents, and were numbered 10965, and were issued and delivered to your orators, the said Myers and Robert G. Eunson.

That thereupon, after the issuing of the said letters-patent as aforesaid, your orators, the said Myers and said Robert G. Eunson put the said invention into use, by making, using, and vending the same to others, and licensing large numbers of such machines.

And your orators pray that said letters-patent, and the schedule annexed thereto, as aforesaid, may be deemed and taken as part of their bill, and to the originals of which, or a duly authenticated copy thereof, now in your orators' possession and ready to be produced, they crave leave to refer.

And your orators further show, that on the 13th day of May, 1868, on the application of orator the said John Myers and said Robert G. Eunson, they having then and there duly complied in all respects with the provisions of the statutes in such case made and provided, and paid the fees required by law, the said letters patent were extended for the term

of seven years from the 23d day of May, 1868, pursuant to the
4 statute in such case made and provided.

And your orators further show, that by assignment dated the 20th day of May, 1868, duly signed, sealed, stamped, and recorded in the Patent-Office, the said Robert G. Eunson sold and assigned to Eugene S. Eunson all his right, title, and interest in and to said letters-patent, and the extension thereof, and all damages for infringing the same.

And your orators have, ever since the date of the said assignment, been and now are entitled to all the rights, interests, and privileges thereby secured unto them in and to the said invention or discovery, in the said letters-patent, and assignments and extension particularly set forth, and are, and ever since the date thereof have been, entitled to the exclusive use of the said invention and improvement.

And your orators further show unto your honors, that the said invention or discovery so patented, aforesaid, unto your orators, the said Myers and the said Robert G. Eunson, is of very great utility; and that the same has been extensively introduced into public use, and that the public have generally acquiesced in your orators' exclusive right to the same; and your orators would, but for the wrongful acts of the said defendants and others acting in concert with them have made large gains, profits, and advantages, from the manufacture, use, and sale of the said invention; and your orators would, but for the wrongful acts and doings of the said defendants and others acting in concert with them, now be enabled to use the said invention, to which they are entitled to the exclusive right as aforesaid, with profit and advantage, but that by the said wrongful acts and doings they are now prevented and hindered from so doing.

And your orators further show unto your honors, upon information and belief, that the said defendants, John Dunbar and Jeremiah Hopper, well knowing the premises and the rights and privileges secured unto your orators, and in order to deprive them of the profits, benefits, and advantages which might and otherwise would have accrued to them, at 124 Worth st., New York, & elsewhere, and within the said southern district of New York, and without the license or permission of your orators or either of them, they, the said defendants, have ever since the 23d day of May, 1854, unlawfully and wrongfully made or caused to be made, sold or caused to be sold, used or caused to be used, one or more
5 machines for sawing thin boards, said to have been made by the Huntington Machine-Works, each and all containing the said invention, discovery, improvements, and combinations, consisting as therein and in the schedule set forth, of the employment or use of the deflecting-plate', E E, on both placed at the sides of the saw as therein shown, for the purpose therein described. 2d. The employment of the clamps I I, as therein shown, substantially as and for the purpose described, and also the employment of an adjustable bed F, with clamps as described in combination with the saw, when the saw has a stiffening plate in line with said bed, as and for the purpose described, the exclusive right to which is secured to your orators, as hereinbefore set forth, and which said unlawful making, use, and sale, by the defendant as aforesaid, is a violation and infringement of your orators' exclusive rights and privileges, and that the said defendants have derived and received, and are still deriving and receiving from such use great gain and profits, but to what amount your orators are ignorant and cannot set forth, but your orators believe the same to be about the full sum of twenty thousand dollars, and so charge the fact to be, and pray that the defendant may be required to make a disclosure of all such gains and profits.

And your orators in like manner aver that the defendant, though requested to desist from such unlawful use, and to pay your orators such gains and profits as the defendants have actually made, refuse so to do, by means whereof your orators are and have been greatly injured, and are now prevented from putting the said invention or discovery into successful operation, and are deprived and prevented from receiving the gains and profits to which they are lawfully entitled from the exclusive rights and privileges so granted and secured to them as aforesaid, and which they would have derived and acquired, and would now derive and acquire, but for the said wrongful acts of the said defendants.

And your orators pray that the said defendants may be compelled by a decree of this honorable court to account for, and pay over, unto your orators all such gains and profits as have accrued or arisen to or been earned or received by the said defendants, and all such gains and profits as your orators would have received, but for the said wrongful acts and doings of the said defendants.

And that the said defendants, their attorneys, solicitors, clerks, servants, agents, and workmen may be perpetually enjoined and restrained by the decree of this court from directly or indirectly making, or causing to be made, using or causing to be used, or vending to others to be used in any manner, any machines containing or embodying the said invention granted by the said letters-patent, as issued and extended and assigned as aforesaid unto your orators, and from infringing upon or violating the said letters-patent, by the use or sale of the said machines in any way whatsoever. And that all such infringing machines may be forthwith destroyed, or delivered up to your orators, and that the said defendant may be decreed to pay the costs of this suit, and that your orators may have such other relief as the equity of the case may require and as to your honors may seem meet.

To the end, therefore, that the said defendants may, if they can, 'how why your orators should not have the relief hereby prayed, and may full, true, direct, and perfect answer make, according to the best of their or their clerks', agents', or workmen's knowledge, remembrance, information, and belief, to the several matters hereinbefore averred and set forth, as fully and particularly as if the same were here repeated, paragraph by paragraph, and they were thereto severally and specifically interrogated, and especially that said defendants answer and set forth:

First. Whether the said John Myers and Robert G. Eunson were not, prior to the 23d day of May, 1854, the true, first, and original inventors or discoverers of the said invention or discovery described in said letters-patent, and every material part thereof, and if not, who was or were the true, original, and first inventor or inventors of the same, and if any other person or persons was or were the true, first, and original inventor or inventors of the same, where he or they reside, and where and when he or they invented or discovered the same, and how the invention or discovery of such other person or persons, if any, differed, if at all, from the said invention or discovery of said John Myers and Robert G. Eunson.

Second. Whether the said defendants have at any time, and, if so, where and when, made, sold, used, or caused to be made, sold, or used, any circular saw or saws having, employing, or using deflecting plates, one or both placed at the sides of the saw, as and for the purpose described in said letters-patent, or if the circular saw or deflecting plates differed from those described in said letters-patent, in what particulars they differed therefrom, or in what respect they were differently applied or combined from those described in said letters-patent, if at all.

Third. Whether said defendants have at any time, and, if so, where and when, made, sold, used, or caused to be made, sold, or used, in connection with a circular saw or saws, or with deflecting plates or adjustable roller-beds, substantially as described in said letters-patent, or both, any clamp or clamps substantially as and for the purpose described in said letters-patent, and if said defendants have used a clamp or clamps in connection with a circular saw or deflecting plates, in what respect such clamp or clamps differed from the clamps described in said letters-patent, and in what respect they were differently applied to or combined with such saw or deflecting plates, if at all.

Fourth. Whether the machine or machines now in use by the defendant' for the purpose of sawing or resawing thin boards was not and is not substantially similar to the machine described in said letters-patent, and, if not, how the same differs therefrom.

Fifth. Whether the defendants have not made large gains and profits from the use of such saw and deflecting plates and clamps, and, if so, to what amount.

6 May it please your honors to grant to your orators a writ of subpœna ad respondendum, issuing out of and under the seal of this honorable court, directed to the said defendants, John Dunbar and Jeremiah Hopper, commanding them to be and appear, and make answer to this bill of complaint, and to perform and abide by such order and decree herein, as to this court may seem required by the principles of equity and good conscience.

May it also please your honors to grant to your orators a provisional or preliminary injunction issuing out of and under the seal of this honorable court, enjoining and restraining the defendants, their attorneys, solicitors, clerks, servants, workmen and agents to the same purport, tenor, and effect hereinbefore prayed for, in regard to said perpetual injunction.

And your orators will ever pray, &c.

JOHN MYERS.
EUGENE S. EUNSON.

WHITNEY & BETTS,
Complainants' Solicitors.
FREDERICK H. BETTS,
of Counsel.
FREDERIC H. BETTS.

UNITED STATES OF AMERICA,
Southern District of New York, ss:

On this eighteenth day of April, 1870, before me came John Myers and Eugene S. Eunson, to me personally known, who, being by me duly & severally sworn, did depose and say, and each for himself, that he is one of the complainants in the foregoing bill of complaint named, and that he has read the said bill, subscribed by him, and knows the contents thereof, and that the same is true of his own knowledge, except as to matters which are therein stated to be on information and belief, and as to those matters he believes it to be true.

[L. S.] HENRY DE PUYSTER,
Notary Public, New York Co.

(Indorsed:) United States circuit court, southern district of N. Y. John Myers and Eugene S. Eunson vs. John Dunbar and Jeremiah Hopper. Bill. Matthews & Betts, complts.' solicitors, 31 & 33 Pine st. Filed Apl. 26, '70.

7 United States circuit court, southern district of New York.

JOHN MYERS AND EUGENE S. EUNSON
vs.
JOHN DUNBAR AND JEREMIAH HOPPER. } In equity.

The joint and several answers of John Dunbar and Jeremiah Hopper, defendants, to the bill of complaint of John Myers and Eugene S. Eunson, complainants:

These defendants, now and at all times hereafter, saving and reserving to themselves all and all manner of benefit and advantage of exception which may be had or taken to the manifold errors, uncertainties, insufficiencies, and imperfections in complainants' said bill of complaint contained, for answer thereunto, or unto so much and such parts thereof as they are advised it is material or necessary for them to make answer unto, answering, say:

8 That they admit, on information and belief, that letters-patent of the United States were granted to John Myers and Robert G. Eunson, bearing date the 23d day of May, A. D. 1854, for an alleged new and improved machine for sawing thin boards, &c.

And these defendants, further answering on like information and belief, admit that the said letters-patent were extended and renewed for the further term of seven years from and after the 23d day of May, A. D. 1868, but whether on application for such extension the said John Myers and Robert G. Eunson complied with all the requirements of the statute in such case made and provided, these defendants do not know and are not informed save and except by said bill of complaint, and therefore leave the complainants to make such proof thereof as they may be advised.

And these defendants, further answering, say that they do not know and are not informed, save and except by said bill of complaint, whether on the 20th day of May, A. D. 1868, or at any other time, the said Robert G. Eunson sold, assigned, and set over unto the complainant, Eugene S. Eunson, all or any portion of his right, title, and interest in said letters-patent, so granted and extended as recited in complainants' said bill of complaint, and therefore leave the complainants to make such proof thereof as they may be advised.

And these defendants, further answering, deny that the said alleged invention so patented to the said John Myers and Robert G. Eunson, as recited in said bill of complaint, is of great utility and value, or that the same has been introduced by the complainants into extensive public use, or that the public generally have acquiesced in and acknowledged the complainants' exclusive right to the same or any portion thereof.

And these defendants, further answering, admit that they have heretofore used and are still using a machine for sawing thin boards, &c., but they aver that such machine so used by them is substantially different from the machine described and claimed in the said letters-

9 patent recited in complainants' said bill of complaint; and these defendants deny that by using said machine they have infringed, or are now infringing upon said letters-patent, or violated any legal rights of the complainants under the same.

And these defendants, furthering answering, say, that if the said letters-patent in said bill of complaint recited should be so construed as to cover any feature, device, or combination contained in said machine so used by them, then and to that extent they charge that said letters-patent are void for want of novelty, the same things and every

substantial and material part thereof claimed in said letters-patent as new having been well known and used in various parts of the United States long prior to the alleged or any invention thereof by the said John Myers and Robert G. Eunson, and that knowledge of such prior use was and is possessed by the following-named persons, and at the places mentioned, viz:

Daniel Doncaster, who now resides at Albany, in the State of New York, at said Albany; James Hay, who resides at Cohoes, in the State of New York, at said Cohoes; James Moses, of said Cohoes, N. Y., at that place, at Philadelphia, in the State of Pennsylvania, at New York City, and at Yonkers, in the State of New York; Henry McGoffin, who resides sat Cohoes, N. Y., at said Cohoes; Charles Turner, who resides at Jersey City, N. J., at Cohoes, N. Y., at Batestown, and elsewhere in the State of New York; Isaac Smith, who resides at New York City, at Yonkers and elsewhere in the State of New York; and by John W. Lyman, William O. Robbins, E. W. Roberts, and John Frame, all of whom reside in New York City, at said city.

And the same things will also be found fully described and set forth in a printed publication, entitled "Holtzapffel's Mechanical Manipulation," published in London, England, in the year 1847, at pages 809 to 813 inclusive of the 2d volume of said work. And in English letters-patent No. 1065, dated A. D. 1853, sealed on the 2d of November.

10 And also described and patented in letters-patent of the United States, re-issued to Pearson Crosby, on the 28th day of April, 1857, No. 458, on the surrender of letters-patent granted to him November 3, 1841; and also in letters-patent of the United States granted to said Pearson Crosby, April 8, 1851, numbered 8022.

Wherefore, and for the causes aforesaid, these defendants wholly deny the equity of the complainants' said bill of complaint, and their title to the relief prayed against these defendants.

These defendants deny that there is any other matter, cause, or thing in complainants' said bill of complaint contained, material or necessary for them to make answer unto, and not herein and hereby well and sufficiently answered, confessed or avoided, traversed or denied, that is true to the knowledge or belief of these defendants; all which matters or things these defendants are and will be ready to aver, maintain, and prove as this honorable court shall direct, and humbly pray to be hence dismissed, with their reasonable costs and charges in this behalf most wrongfully sustained.

JOHN DUNBAR.
JEREMIAH HOPPER.

KELLER S. BLAKE,
Deft's. Sols. and of Counsel.

UNITED STATES OF AMERICA,
Southern District of New York, ss:

John Dunbar and Jeremiah Hopper, being severally duly sworn, do depose and say that they are the defendants named in the foregoing answer; that they have read the same, and know the contents thereof, and that the same is true, except as to such matters therein

11 stated on information and belief, and as to such matters they verily believe it to be true.

JOHN DUNBAR.
JEREMIAH HOPPER.

Sworn to before me this 9th day of July, 1870.

[L. S.]

ALBERT K. POST,
Notary Public, New York City.

United States circuit court, southern district of New York.

JOHN MYERS AND EUGENE S. EUNSON
vs.
JOHN DUNBAR AND JEREMIAH HOPPER. } In equity.

Amendment to defendants' answer, filed in the above-entitled cause on the 11th day of July, A. D. 1870:

These defendants, for a further and more complete answer to the complainants' bill of complaint, aver that long anterior to the alleged invention or discovery by the said John Myers and Robert G. Eunson, described and claimed in the letters-patent in said bill of complaint recited the same and every substantial and material part of the same was well known and used in various parts of United States, and that, among others, knowledge of such prior use of said alleged invention was and is possessed by C. M. Whiting and George W. Cook, both of whom now reside at Philadelphia, Pennsylvania; Alvah Metcalf, who now resides at Ashland, Massachusetts, and by William Rockwood, who now resides at Franklin, Massachusetts, all of whom had such knowledge at said Franklin and elsewhere in the State of Massachusetts. And the same things will also be found described and claimed in certain letters-patent of the United States granted to Manassah Andrews and James Sproat, on the 31st of December, 1839, No. 1457.

Dated New York, December 8th, 1870.

JOHN DUNBAR.
JEREMIAH HOPPER.

By their solicitors,
KELLER & BLAKE.

12 Circuit court of the United States for the southern district of New York.

JOHN MYERS ET AL.
vs.
JOHN DUNBAR ET AL.

The replication of John Myers & Eugene S. Eunson, complainants, to the answer of John Dunbar and Jeremiah Hopper, respondents.

The repli'ants, saving and reserving now, and at all times hereafter, all and all manner of benefit and advantage of exception which may be had or taken to the manifold uncertainties and insufficiencies of the said answer, for replication thereto say that they will aver, maintain, and prove the bill of complaint to be true, certain, and sufficient in law to be answered unto; and that said answer is uncertain, untrue, and insufficient to be replied unto, without this, that there is any other matter or thing whatsoever in the said answer contained material or effectual in the law to be replied unto, not herein and hereby well and sufficiently replied unto, confessed and avoided, traversed and
13 denied, is true; all which matters and things the repli'ants will be ready to aver, maintain, and prove, as this honorable court shall direct, and humbly pray, as in and by the bill is already prayed.

MATTHEW & BETTS,
Complainants' Solicitors, 31 & 33 Pine Street.

(Endorsed:) Circuit court of United States. John Myers et al. vs' John Dunbar. Replication. Matthews & Betts, complts. solrs. Filed Sept.

14 Circuit court of the United States, southern district of New York.

MARGARET MYERS, EXECUTRIX, AND OTHERS,
against
JOHN DUNBAR AND OTHERS. } In equity.

Testimony taken for final hearing on behalf of the complainants, under and pursuant to the 67th rule in equity, as amended, before Albert K. Post, an examiner of the court.

NEW YORK, *February 10th*, 1871.—11 a. m.

15 Present, Frederick H. Betts, esq., of counsel for complainants, and Charles F. Blake, esq., of counsel for defendants.

In the above-entitled case complainants' counsel puts in evidence letters-patent of the United States, to John Myers and Robert G. Eunson, dated May 23d, 1864, No. 10965, together with the certificate of the extension thereof for seven years from May 23d, 1868, marked "Complainants' exhibit No. 1."

Also a printed copy of the disclaimer filed by the complainants, Margaret Myers, executrix, and Eugene S. Eunson, dated November 30th, 1870, marked "Complts.' exhibit No. 2."

Also an assignment to the complainant Eugene S. Eunson, by Robert G. Eunson, of all his interest in said letters-patent and claims for damage for infringing the same, dated May 20, 1868, marked "Complts.' exhibit No. 3."

Also a model of the resawing machine described in said letters-patent No. 10965, marked "Complts.' exhibit No. 4."

Also a model of a resawing machine, marked "Complts.' exhibit No. 5, which the defendants' solicitors admit has been used by the said defendants prior to the filing of the bill in this cause.

16 Circuit court of the United States for the southern district of New York, in equity.

MARGARET MYERS, EXECUTOR, ET AL.
vs.
JOHN DUNBAR ET AL.

Proofs for final hearing taken before me Joseph Gutman, jr., examiner, in the above causes, on the part of the complainants, under and pursuant to the 67th rule in equity.

N. Y., *February* 9, 1871, 1.30 p. m.

Present: Mr. FREDRICK H. BETTS, counsel for complainants.

FRANCIS C. TREADWELL, jr., a witness of lawful age, produced on the part of the complainant, having been by me first duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth on the matters of controversy herein, and being examined by Mr. Betts deposes and says as follows:

1. Q. What is your name, age, residence, and occupation?

17 A. My name is Francis C. Tredwell, jr. I am 43 years of age. I reside in the city of New York. I am a solicitor of patents and consulting engineer for the last ten years and upwards. I have frequently been examined as an expert in patent cases in the United States circuit courts.

2. Q. Have you examined the letters-patent granted to John Myers

and Robert G. Eunson, dated May 23, 1854, extended May 13, 1868, and the disclaimer thereto, dated November 30, 1870, and do you understand the machine therein described; if so, please state the distinguishing characteristics of the invention therein described.

A. I have examined said letters-patent, and I have also had the advantage of seeing machines constructed in accordance therewith in practical operation. The machine described in said patent is not intended to saw logs, but is a machine for sawing timber into thin stuff of various thickness, an operation commonly called resawing. It is desirable in a resawing machine that the kerf or portion of the wood removed by the saw should be as narrow as possible, in order to get the greatest number of thin boards out of a thick board, and therefore the kind of saw, known as a veneer-saw, is the only practicable or suitable saw for that purpose. A veneer saw is a saw composed of thin plates or segments screwed fast to a central circular flange or stiffening-plate in such manner that the protuberance of the stiffening-plate is upon one side of the saw, the other side of the saw having a plane surface without any projection of the stiffening-plate. The kind of a saw known as the veneer-saw is generally from four to seven feet in diameter, and the plates being thin the wood fed to them to be cut has to be secured and fed by devices which will prevent the wood from chattering and spoiling the cut. As veneer-saws were formerly used, the wood to be fed them was securely screwed to the side of a travelling-bed, which travelling-bed was made adjustable, towards the saw and fixed upon another bed, which moved on ways parallel with the side of the saw, the ways and travelling bed being placed opposite to the
18 flat side of the saw, consequently when the travelling-bed moved forward the saw would cut a thin veneer according to the guage, the veneer passing off on the side of the saw which had the protuberant stiffening-plate, and the wood from which the veneer was cut passed along the plane side of the saw, with the carrying-bed being screwed fast thereto as before stated. The operation was a very slow one, because it involved preparing the wood to be fastened to the bed, and screwing the wood to the bed by screws, which would project from the bed into the wood far enough to hold the wood securely against the action of the saw, and that operation requiring that the screws should be numerous, the portion of the wood next to the bed of the depth of the screws was practically lost, or at all events was not suitable for market as a board. These machines are still used for sawing veneers from hard wood, because the bed feed and the screwing of the wood enables a very thin veneer to be cut with great accuracy from hard wood.

The machine described in the patent is designed for resawing wood into thin boards, suitable for backs of mirrors or pictures, from boards which come to market thicker than required for use; the transportation of thin boards being apt to injure them for market by chipping and splitting, besides the ordinary effect of exposure to the weather. Such an operation requires considerable accuracy, though not so great accuracy as possessed by the veneer-machine; and to make it practically useful, must be performed with a rapidity not attainable by the veneer-machine. In the machine described in the patent, the wood is fed by feeding-rollers, which grasp the wood with a heavy, yielding pressure, and move it forward against the saw. These rollers are so made and organized in the machine described in the patent as to yield on one side of the board fed through the machine, and to remain fixed on the other side of the *of the* board on a line or in a plane parallel with the flange side of the saw when adjusted to that position, and the board being entered be-

tween the rollers is fed forward to the saw and guided by the rollers, so as to determine the thickness of the piece of board to be cut by
19 the saw. The feeding-rollers on either side of the machine are capable of such adjustment, that is, one side or the other may be the fixed or gauge side, (called the line side in the patent,) the opposite side yielding to the difference of thickness of the board, in order that the board that is cut off by the saw shall be of equal thickness from end to end. There is a provision in the machine described in the patent for holding the board fed through the machine to be sawed, after it has passed through the feed-rollers and when presented to the saw. The provision consists in a clamp, which presses upon both sides of the board near the saw, and either side of which may be made to yield to inequalities of thickness of the board, the opposite side being fixed in line with the gauge side of the feeding apparatus, and it is a feature of the clamp mechanism that its elasticity is independent of the elasticity of the feeding-rollers, so that it may yield to inequalities of the boards to be sawed, which have passed the feeding-rollers without affecting their pressure upon the part of the board they are acting upon to feed it. The provision of the feeding-rollers so combined as to feed the board to be cut and present it so as to cut from it a board of the proper width, together with the feature of the independent elastic clamp, combined with the veneer-saw, gives capacity for performing the operation of resawing boards with great rapidity. There is, however, another important feature of the resawing machine, namely, the application of deflectors to the sides of the veneer-saw. These deflectors are thin, stiff plates, set close to the sides of the saw, and thicker as they recede from the cutting-point, or else made to diverge from the side of the saw, and their operation is to protect and relieve the saw from the friction and pressure of the surface of the saw-cut and board, and to open the saw cut or keef in the manner of a wedge, so as to relieve the saw at the cutting-point, thereby saving friction and motive power in running the saw. Although the machine described in the patent is not so accurate as the old veneer-saw, it is sufficiently accurate for resawing boards, and will do fifty times the work in resawing planks and boards.

20 3. Q. Have you examined the model of the machine for resawing used by the defendants, and marked "Exhibit No. 5?" If so, state whether or not, under the supposition that both of the pairs of rollers shown in said model are feeding rollers for the purpose of propelling successive boards between them to the saw, you consider the machine shown by said model to be substantially different from or similar to the machine described in said letters-patent, as modified by said disclaimer, giving your reasons.

A. I have examined the model referred to in the question, and am of opinion that the machine which I represent embodies the combinations of devices respectively described in said patent, and first, second, and fourth clauses of the claim thereof as modified by the disclaimer. My reasons are as follows: In the machine represented by said model there is employed a circular saw, of the kind known as a veneer-saw, made of thin plates of metal, and stiffened by means of a stiffening-plate upon one side of the saw, to which the saw-plates are secured, the other side of the saw being flat, and in order to protect the saw from the friction caused by the surfaces of the saw kerf in the board fed to the saw by the feeding-rollers there are two deflecting plates or shields, placed one on each side of the saw, so that the saw-cut in the board will be opened sufficiently by them to prevent the surfaces of the board from pressing against the surface of the saw. This, I understand to be the subject-

matter of the first claim of said patent, as modified by the said disclaimer, the combination specfied in said claim being limited, as I understand it, to the use of two deflecting-plates, one on each side of' the saw. The action of the deflecting-plates being to take the strain of the board or plank being sawn, and relieve the saw from the friction that would otherwise take place, and this would not practically be done by the use of only one deflector in a machine like the machine of the patent, or the defendant's machine, wherein the board is fed to the saw by rollers, because the use of a single deflector in such machine would tend to increase the friction of the board upon the saw.

21 The defendants' machine, represented by the model, contains, in addition to the circular saw thus protected from the effect of the pressure of the board, a mechanism for feeding and guiding the boards to the saw. This mechanism consists of feed-rollers and clamps. The feed-rollers are placed vertically, opposite to each other, in such manner as to grasp the board and propel it towards the saw, and also to grasp a succession of boards and propel them towards the saw. The clamps take hold of the board at the sides thereof, near the saw, and steady it while it is being sawn, and the arrangement of the clamps with the feed-rollers is such that one of the pairs of feed-rollers is independent of the action of the clamps, that is to say, the clamps may open or move towards each other without affecting the action of the first pair of feed-rollers, to which they are not attached, and with which they are not connected. The result of such arrangement is, that the first pair of feed-rollers and the clamps, being separately elastic, inequalities in the boards passing through the machine, and difference of thickness of successive boards passing successively through the machine, will not affect the clamps and the first pair of feed-rollers at the same time, so that the opening of the clamps caused by an inequality of the board at that point cannot also cause the first pair of feed-rollers to open and lose their grasp upon the board they are feeding. This independent elasticity of the clamps and feed-rollers I understand to be the subject-matter of the second claim of the patent, and consider that the combination by which it is secured in defendants' machine is substantially the same as that described in said patent. I am aware that in said defendants' machine as represented by said model the clamps are secured to the second pair of feed-rollers, and I assume that their construction is such as not to have any practical elasticity independent of the second pair of feed-rollers, whereas in the patent both pairs of feed-rollers are described and shown as having elasticity independent of the clamps; but this I do not consider a substantial difference, although I do not consider it as good an arrangement of the parts. The result attained by the combination of the patent, of giving the machine capacity to feed continuously by the feed-rollers without regard to the movement of the clamps, and independently of such movements, is attained in defendants' machine by making the first set of feed-rollers independent of the clamps. In the machine described in the patent there is a roller-bed or frame of rollers on each side of the machine, each frame containing two feed-rollers, which are operative to feed forward the boards. In the defendants' machine the four feed-rollers are held by four frames, and the clamps are attached to two of the frames nearest the saw, but this is a mere difference of mechanical arrangements. I do not think that changing the arrangement of the clamps with respect to one of the sets of feed-rollers in the roller-bed, so that the elasticity of the clamp is not independent of the elasticity of that set of feed-rollers, is a substantial change in the mechanism for feeding and guiding the boards to the saw described in

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the patent, which requires an independent elasticity between the clamps and feed-rollers. If such a change were substantial, one would only have to add another set of feeding-rollers to these described on the patent, and connect the third set with the clamps, so that they would not be independently elastic, in order to avoid this claim of the patent.

In the defendants' machine, represented by the model, the saw has a stiffening plate in line with an adjustable bed of feed-rollers and clamps, whereby the stiffened or rounded side of the saw is made the line side, substantially described in the patent and fourth claim thereof. The adjustable roller-bed in the patent is not made elastic on the line side, because it determines the thickness of that part of the board which is to be sawn from the board fed into the machine, and the clamps connected with that adjustable bed *is* provided with means to destroy its elasticity upon that side, so as to present the board to the saw at the exact distance from the outside of the board required to make the proper width. The object of making the stiffened side of the saw the line side is to accommodate the machine to sawing boards in two or more parts of unequal thickness, letting the thin part sawn from
23 the board or plank go upon the stiffened or rounded side of the saw, the thinner part of the board being sawn having more elasticity than the plank from which it is sawn; and, moreover, if the plank be of different thickness at the ends, by this arrangement a number of thin boards may be sawn from it of equal thickness without first reducing the plank to equal thickness, because the elasticity of the opposite feed-rollers and clamp compensates for the unequal thickness from end to end of the plank.

24 Circuit court of the United States for the southern district of New York.

MARGARET MYERS, EXECUTRIX, AND OTHERS,
vs.
JOHN DUNBAR AND OTHERS.

Testimony taken for final hearing on behalf of the complainants, under and pursuant to the 67th rule in equity, as amended, before Albert K. Post, an examiner of the court.

NEW YORK, *Feb'y 23d*, 1871—3 p. m.

FRANCIS TREADWELL, jr., a witness on the part of the com-
25 plainant, being recalled in rebuttal, and being examined on the part of the complainant by Mr. Frederick H. Betts, deposes and says as follows:

Q. 1. Have you examined Holtzapffel's Mechanical Manipulation, published in London, A. D. 1847, and specially at the pages 809 to 813 of the 2d volume thereof? If so, state whether or not you find therein described any device or mechanical combination substantially similar to any of the devices or combinations contained in the letters-patent to Myers and Eunson, No. 10965.

A. I have examined the work referred to, and do not find therein described or shown any of the devices or combinations of devices set forth as the invention of Myers and Eunson in their letters-patent, and do find that the devices described and shown in said book as referred to are substantially different.

I find that the guide described in the said book for leading off the

veneer from the side of the saw, taken in connection with the saw described, is a substantially different construction and combination from the deflecting plates and saw described and shown in said patent, the saw described in the book being a frame-saw, which would be entirely impracticable in resawing lumber, combined with a guide, which, from its position and angle, would inevitably split off the pieces of resawn lumber, whereas the patent describes a flanged sectional veneer-saw, combined with deflecting-plates, so constructed and placed as to protect the saw from the gripe and friction of the surfaces of the saw-kerf, and yet so placed and construct' as not to split open the boards being resawed.

In my opinion the description in said book gives no description or suggestion of a saw protected by deflecting plates suitable for the work of resawing lumber, or that could be practically used for that purpose.

Moreover, the guide shown in said book for leading off the
26 veneers from the side of the saw, although a perfectly proper and useful construction in a machine for sawing veneers, would be of no practical value in a machine for resawing lumber, if its construction and angle, with reference to the saw, were modified so as to be like one of the deflectors described in said Myers and Eunson patent, and it were applied to a proper saw, because the placing of a deflector upon only one side of the saw of a resawing-machine in which the boards are fed to the saw by rollers would only increase the friction upon the saw, instead of protecting the saw from friction; that is, the deflector upon the one side of the saw would cause the board being resawn to be brought to bear upon the other side of the saw with much greater pressure and friction than if no deflector at all were used. This did not occur in the veneer-machine in the work referred to, because the log from which the veneer was sawn was held by a sliding-bed, which prevented it from making any pressure upon the side of the saw, and the veneer separated from the log by the saw is so thin that it makes no practical friction upon its side of the saw, the guide being used to lead it away from the saw, so that it may not be injured by the saw.

2. Q. Have you examined the English letters-patent to Edward Loradoux Belford, No. 1065, sealed November 2d, 1853, and the American letters-patent No. 8022, dated April 8th, 1851, granted to Pearson Crosby? If so, please state whether or not you find in either of said letters-patent any of the devices or combinations of devices described in the patent of Myers and Eunson, No. 10965, and state your reasons for your opinion.

A. I have examined both of the patents referred to in the question, and understand that they both describe and show the same machine.

I do not find in either of them any of the devices or combinations of
27 devices set forth in the Myers and Eunson patent. In the first place, the saw has no deflectors at the sides. It is a solid plate-saw and not a veneer-saw held by a protuberant stiffening flange, as in the Myers and Eunson patent, and seems to have been designed for the purpose of obviating or endeavoring to obviate, by a change of the construction of the saw itself, the difficulties occurring in the use of the veneer-saw with the stiffening plate, which are overcome in the machine described in the Myers and Eunson patent by the use of two deflecting plates, one on each side of the saw.

In the next place, the machine described in said patents has no clamps which are independent of the feed-rollers with respect to their elasticity, as in the Myers and Eunson patent machine, or, in other words, the feed-rollers of the English patent, and the Pearson Crosby patent, have

no elasticity independent of the clamping or guide-rollers between them and the saw, but are rigidly connected together. By reference to the specifications and drawings, I find that the feed-rollers are not the first pair of rollers which rec'ive the board as it is introduced into the machine. This first set of rollers are merely pressure-rollers, which act in connection with the feed-rollers to keep the board straight, and to take out the warps or "wind" of the plank or boards as it is being fed to the saw. These rollers have no connection with the driving power of the machine, and cannot act to feed the board forward. They merely roll on the board, which is drawn through them by the feed-rollers, which are placed between them and the saw. The feed-rollers are in a separate frame or frames, one on each side of the machine, each containing one feed-roller, the two feed-rollers being connected by rotating shafts with universal joints to the driving power of the machine.

In front of these feed-rollers, and in fixed bearings in the same frames with them, are two guide-rollers, which are shorter than the feed-rollers, and are designed to guide the board close up to the saw. These guide-
28 rollers have no elasticity independent of the feed-rollers of the machine, and any board which was passing between the feed-rollers would control the position of the guide-rollers by that part of its surface which was grasped by the feed-rollers, so that the guide-rollers would not grasp the end of the board passing through them, which happened to be a little thinner than the forward end of a succeeding board that had been introduced between the feed-rollers, and a thinner board which happened to succeed a thicker board would not be taken hold of by the feed-rollers to feed it forward while the thick board was grasped between the guide-rollers. The Crosby machine, therefore, has not a combination of devices, viz, clamps or guides of independent elasticity with respect to the feed-rollers, which gives the Myers and Eunson machine the capacity of feeding and sawing successively boards of varying thicknesses.

There is in the English patent and the Crosby patent a spring frame which connects the first pair of rollers, i. e., the pressure-rollers, with the rigid frame which holds the feed-rollers and guide-rollers, so that the two sets of rollers have an elasticity to a certain degree independent of each other; but this is only for the purpose of enabling the first set of rollers to act with an elastic pressure upon the boards while they are being drawn through them by the feed-rollers for the purpose of taking out the warps in the board; but this has no relation whatever to the operation of feeding-rollers, which have elasticity independent of guides, which are interposed between them and the saw, and there is no such independent elasticity of guides and feed-rollers in the machine described in these two patents.

Examination adjourned to February 24, 1871, at 1 p. m.

29 NEW YORK, *Feb. 24th*, 1871—1 p. m.

Present, counsel as before; and the witness, FRANCIS C. TREADWELL, jr., in further answer to question 2, deposes and says as follows:

I do not find in said English patent and Pearson Crosby patent the combination of the adjustable bed, with clamps, and the saw with a stiffening-plate in line with said bed, by which the stiffened or rounded side of the saw is made the line side, substantially as described and set forth in the Myer & Eunson patent and 4th claim thereof. The saw has no stiffening-plate in the English patent nor in the Pearson Crosby patent like that described in said Myers & Eunson patent. It is only a

small collar near the central part of the saw, which does not come in the way of the boards. This is sufficient reason for my opinion, but other reasons may be given relating to the difference between the roller-beds of the two machines which I have explained at length in the preceding portion of this answer.

Q. 3. Will you please look at the model of the Kenyon & Dunbar machines, which is marked "Exhibit No. 5," in the cases against Kenyon & Dunbar, and state whether the arrangements of clamps and feeding-rollers in said machines (all the rollers in the model being feeding-rollers) is the same, or substantially th' same, as the arrangement of rollers with the short guiding-rollers in the English patent No. 1065, and in the Pearson Crosby patent, No. 8022, and give your reasons for the opinion you express.

A. It is substantially different. In the English patent and the Pearson Crosby patent, as I stated in my last answer, there is but one pair of feeding-rollers, and the clamps or short rollers are rigidly connected with them by the frames which hold the feed-rollers; and therefore the feed-rollers and clamps or short rollers have no elasticity independent of each other. In the machine represented by the model of the Kenyon & Dunbar machines, represented in the question, there are two pairs feeding-rollers, and the clamps, although rigidly connected with one of the pair of feed-rollers, are independently elastic of the other pair of feed-rollers, which last-mentioned pair of feed-rollers first takes hold of the board to move it towards the saw. This gives the machine capacity to feed forward successfully boards of different and varying thicknesses by reason of the independent elastic pressing of the first pair of feed-rollers, as respects the elastic pressure of the clamps.

Q. 4. In the defendants' machine, represented in the model marked "Exhibit No. 5," in the Frame case, is the clamping mechanism independently elastic of the feeding-rollers on both sides; and, if not, on which side as respects the flange or rounded side of the saw?

A. In the model Exhibit No. 5, in the Frame case, the clamping mechanism is independently elastic of both sets of feeding-rollers on one side of the saw, i. e., the flat or plane side of the saw; and on the other side the member of the clamp and feed-rollers are rigid.

Q. 4. Will you please look at the complainant's patent, No. 10965, and state whether or not in the operation of the machine there described and as described and shown, the clamping mechanism, while the machine is in operation, is intended to be or described as independently elastic of the feeding-rollers on both sides of the machine? In other words, whether in the operation of said machine, two elastic clamps are to be used?

A. The patent describes and the drawings show that when the machine is in operation the feed-rollers on one side are permanently adjusted without elasticity, and the member of the clamp on that side is also prevented from being forced back beyond the line of the feed-rollers by a set-screw, which is called a stop in the patent. It may have some elasticity as in the direction towards the other clamp, but this is of no practical account, because the opposite member of the clamp is left free to yield by the adjustment of its stop M, and therefore the clamp on the line side may as well be permanent in the position to which it is adjusted. The object of constructing these clamps with springs on both sides and stops on both sides is to enable either side of the machine to be used as the line side, by destroying the elasticity of the spring, or, rather, by taking the pressure from the spring, by means of the adjustable stop on either side, as desired. The operation of the clamps and their

adjustment, so as to render the clamp on the line side practically inelastic, is shown in Fig. 1 of the drawings.

Q. 5. From your understanding of the construction and operation of the machine described in the patent No. 10965, is it essential that either of the clamps should be mounted upon a vertical axis, so that its grasping surface can swing so as to be parallel with, or in a line to, the plane of the saw, in order to enable the clamps to compensate for varying thicknesses of different and successive pieces of stuff, and hold such pieces independently of the roller-bed?

A. It is not, although I think that it is the better form of construction; the special form of clamps described in the patent are so mounted, but regard only seems to be paid to regulating their position and elasticity at the front parts which are near the saw. In the case of the special form of clamps shown in the drawing, two parts of boards succeeding each other of different thicknesses may be held within the grasp of the clamps alone, because both the front and rear portions of the clamp have springs applied to them; but this, although useful, is not the independent elasticity of the clamps with respect to the feed-rollers, which is set forth in the patent.

Q. 6. Have you examined the re-issued letters-patent to Pear-
32 son Crosby, dated April 28th, 1857, No. 458? If so, do you find described or shown therein any of the devices or combinations described in the patent to Myers & Eunson No. 10965? Please state your reasons for the opinion you may express.

A. I have examined said re-issued patent to Pearson Crosby, No. 458, and in my opinion it does not contain any of the devices or combinations set forth in the Myers & Eunson patent mentioned in the question. My reasons are as follows:

Said Pearson Crosby re-issue describes a machine with a straight upright saw, instead of a circular veneer-saw, with a stiffening-plate, and it has no deflectors; therefore it does not contain the subject-matter of the first and fourth claim of said Myers & Eunson patent.

Moreover, said Pearson Crosby re-issue describes a machine without any clamps interposed between the feed-rollers and the saw, which is a sufficient reason, in my opinion, for my conclusion that said patent does not describe the combination of clamps and feed-rollers set forth in said Myers & Eunson patent. The feed-rollers in the Pearson Crosby re-issue are directly in front of the saw; they are held together by a lever, and have some elasticity, owing to their mode of framing; they are marked "*i*" on the one side and "*e*" on the other side, in the drawing, Fig. 1. There are two other sets of rollers, which are marked in the same way, that first receive the board, but they are merely pressure-rollers to take the warps out of the boards which are drawn through between them by the feed-rollers; and the same remarks apply to them which apply to the feed-rollers and pressure-rollers of the machine described in the English patent and the other Crosby patent. In re-issue No. 458, there is no mechanism whatever described for holding the boards between the feed-rollers and the saw.

Q. 7. Have you examined the letters-patent to Andrews & Sproat,
33 dated December 31st, 1839, No. 1457? If so, state whether you find described in the Myers & Eunson patent, No. 10965, as modified by the disclaimer? Please state your reasons for the opinion you express.

A. I have examined the Andrews & Sproat patent referred to in the question, and understand the contents thereof, and am of opinion that it does not contain any of the devices or combinations of devices set

forth in the invention of Myers & Eunson in their patent as modified by the disclaimer. The machine described in this patent has no feeding-mechanism whatever, and no clamps, and therefore does not contain the subject-matter of the 2nd and 4th claims of said Myers & Eunson patent. It has a deflector applied to the stiffening-plate of the circular saw, in substantially the same manner as the deflecting-plate is applied to the stiffening-plate of the saw in the machine described in the Myers & Eunson patent; but it has no deflector upon the other side of the saw, and therefore has not the combination set forth in the said Myers & Eunson patent, and 1st claim thereof, as modified by the disclaimer.

The machine described in said Andrews & Sproat patent is for sawing boards, shingles, and other like articles from a block, and is adapted to that purpose, i. e., the saw-frame and saw described in the patent may be set up alongside of the ordinary sliding-bed frame to which blocks are secured for sawing, and in such connection the saw will be relieved from the friction of the surfaces of the stuff by reason of the sliding bed to which the block is secured, holding that side of the surface of the saw-kerf against the action of the deflector upon the other side of the saw, which protects its side of the saw from the pressure of the surface of the saw-kerf on that side of the saw; or, in other words, in the use of the Andrews & Sproat machines the deflector protects the saw from the friction of the board upon one side, and the sliding-bed frame which holds the
34 block prevents the block surface from being drawn against the saw by the wedge-like action of the deflector. This is a substantially different operation from that descrided in the Myer & Eunson patent, as modified by the disclaimer. In that machine the saw is protected from the pressure of the boards being resawn by a deflector upon each side of the saw, which holds open the saw-kerf sufficiently to prevent its surfaces bearing upon the sides of the saw, thus substituting a simple combination of two deflectors for a deflector on one side of the saw, and a block-holding mechanism on the other side. If the Andrews & Sproat machine were attempted to be used with the deflector, as described, and without a block-holding mechanism, the deflector would cause increased pressure and friction upon the saw, and therefore would not accomplish the purpose stated in said patent. It could not be used with feed-rollers to feed boards for resawing, as in the Myers & Eunson machine.

On the other hand, if another deflector were applied to the Andrews & Sproat saw, it could not be used to cut boards or shingles from a block; because the block would not yield or spring so as to pass the deflector on its side of the saw.

This patent of Andrews & Sproat should, in my judgment, be considered as describing a machine to be used with a suitable block holding and feeding mechanism; because the block could not be fed by hand and prevented from making friction upon the saw.

Q. 8. In your opinion, is the placing of a second deflector on the straight side of the saw after a deflector had been applied to the flange side, as shown in the Andrews & Sproat patent, a mere duplication of the first, which would require no invention?

A. In my opinion, it is not a mere duplication requiring no invention; the mode of operation of the combination of two deflectors with saw, one being placed on each side of the saw, is substantially
35 different from the mode of operation of single deflector in the operation of sawing by the Andrews & Sproat patent machine. It was not obvious that the placing of a second deflector would produce a useful result in the Andrews & Sproat machine; but, on the

contrary, it must have been obvious to any one who had thought of it, that it would defeat the object of that machine, which was to saw shingles from blocks; and, therefore, if a person should set about making such a duplication in the Andrews & Sproat machine, he would have shown that he did not understand the object of that machine, and could have been obliged to discard his "mere duplication;" but when, by the addition or duplication of a previously-known device in a combination, it adapts that combination for another useful purpose, which it would not before subserve, and this addition or duplication is made in view of that new and useful purpose, and the new combination placed so as to operate in conjunction with devices essential for carrying out that new and useful purpose, the whole forming a machine capable of performing a different kind of work from that which the machine performed before, I think there is that sort of contrivance of means to accomplish ends which is the substance of invention.

FRANCIS C. TREADWELL, JR.

The further examination of this witness is adjourned to Monday, February 27th, 1871, at 1 p. m.

NEW YORK, *Feb. 27th*, 1871.

Present, counsel for both parties.

Counsel for the defendants waives the right of cross examining the witness Francis C. Treadwell, jr.

EBEN PECK, a witness, recalled in rebuttal on behalf of the
36 complain't, in answer to interrogatives propounded by Frederick H. Betts, esq., deposes and says as follows:

Q. Have you been previously examined in this case?

A. I have.

Q. 2. How long have you been conversant with the business of sawing and resawing lumber?

A. Since 1851.

Q. 3. What kind of machines for sawing lumber in the direction of the grain were in use prior to 1854, to your knowledge?

A. The upright resawing machines, the log-sawing machine, i. e., the veneer-sawing machine, and the solid-plate circular bench-saw.

Q. 4. Is the upright resawing machine referred to in your last answer substantially represented as to the sawing mechanism thereof, in the patent to Pearson Crosby, of November 3d, 1841, of which defendants' Exhibit No. 3 is a re-issue?

A. Yes, sir.

Q. 5. In these upright resawing machines, what mechanism was used for feeding the stuff?

A. The roller-feed.

Q. 6. In answer to question 3 you mentioned a solid-plate circular bench-saw, what mechanism was used for feeding the stuff in that machine?

A. No mechanical feed; it was a hand feed.

Q. 7. In answer to question 3 you mentioned a log-sawing and veneer-sawing machine, how was the stuff feed in that machine?

A. By a carriage. The log is bolted on to a side-rest, and the machine is only capable and intended to saw from the log.

Q. 8. When the veneer-machine had cut a veneer or slab from the log, what was necessary to be done in order to cut a second veneer or slab?

A. The side-rest was moved nearer to the saw, corresponding with the thickness of the second veneer which was to be removed.

37 Q. 9. Please look at model which the examiner will mark "Complainants' exhibit No. 8," and state whether the same does or does not substantially represent a veneer-saw, in its bed with the ways or tracts for the sliding carriage, on which the side-rest and log are to be bolted or secured?

A. It does.

Q. 10. You have mentioned in your answers describing the several kinds of machines in use prior to 1854 two kinds of mechanical feeds—the roller-feed, which was in use with the upright resawing-machine, and the carriage or log-feed, which was in use with the veneer-machine—will you please state which of the two feeds is the more rapid, and what is the difference of speed, if any, between them?

(Objected to as immaterial.)

A. The roller-feed is the more rapid. The roller-feed is capable of producing about five times as much lumber per day as the carriage-feed, with the same kind of saws.

Q. 11. Are you practically acquainted with the working of the machines built under the Myers & Eunson patent; if so, how long have you been so, and what opportunities have you had of becoming acquainted therewith?

A. I have been acquainted with the Myers & Eunson sawing-machine since about 1860, and I have had in operation since 1862 one to three of the machines, and have now in operation three.

Q. 12. What difference of speed, if any, is there in the operation of the upright saw fed by the roller-feed and the Myers & Eunson saw feed by the roller-feed; and to what is such difference, if any, due?

A. The speed of the Myers & Eunson machine is about six times as rapid as that of the upright machine. The difference is attributed to the Myers & Eunson machine having a circular saw instead of a
38 vertical one, and presenting a greater cutting surface at the same time, thereby allowing a more rapid passage of the board through the saw, the feed being continuous. The upright saw cannot be fed continuously, as the board must remain at rest while the saw is passing up.

Q. 13. What is the difference of capacity of sawing of a Myers and Eunson machine over a solid-plate circular saw fed by hand?

A. The difference is very great. I should say, though I have never tested it, that the solid-plate circular saw, fed by hand, could not cut more than about 2,000 feet per day, while with the Myers & Eunson saw you can cut from 15,000 to 20,000 feet in the same time. With the solid-plate bench saw you cannot cut, practically, lumber over 10 or 12 inches in width; with a Myers & Eunson saw we can cut lumber 26 inches wide.

Q. 13. Please state what devices are used in the Myers & Eunson saw for keeping the sawn stuff from the sides of the saw, and state also what the effects would be if none of such devices were used in that machine.

A. A deflecting-plate is placed on each side of the saw, which keeps the boards, while being sawn, from pressing against the sides of the saw. Without these devices the saw would heat from friction and become inoperative.

Q. 14. In the upright resawing machine, substantially represented in defendants' exhibit No. 3, is there any need of any devices to keep the stuff from the sides of the saw? If not, why not?

A. There is no need of any, from the fact that the blade of the upright saw presents a very small surface to friction, and is constantly relieved by passing above the board, and any device of any kind or nature would render the machine inoperative, if used at the side of *these* of the saw.

Q. 15. In the veneer or log machine represented by complainants' exhibit No. 8 is there any need of any devices to keep the stuff from the sides of the saw on either side; and if not, why not?

39 A. There is no need of any device on the flat side of the saw, nor could any device be used upon that side, as it would prevent the passage of the log attached to the 'de-rest on its sliding-carriage. On the rounding side of the saw a sheer-board is used for the purpose of preventing the veneer from being scratched by the side of the saw or overlapping the back edge of the saw-teeth, and thereby injuring or destroying the veneer.

Q. 16. If the veneer or log machine, supposing it to be used for the cutting of thicker stuff than veneer from the log, what device would be necessary, if any, to keep the stuff sawn off from the log from the rounded or flanged side of the saw?

A. A plate of metal placed at the side of the saw.

Q. 17. Would it be possible to use the saw with a log-feed and sliding-carriage, with two plates of metal placed, one on each side of the saw, as deflecting plates?

A. No, sir. As stated, in my 15th answer, the straight side of the saw must be free and present no obstruction to the passage of the log.

Q. 18. What other mechanical feed for sawing-machines is there besides the log-feed or sliding-carriage?

A. The roller feed; that is all.

Q. 19. Would it be possible, practically, with a roller-feed to use a circular saw, such as the Myers & Eunson saw, without a deflecting-plate on each side of the saw; and if not, why not?

A. It would not, because lumber could not be *gua*ged to size accurately, as the plank being sawed would draw towards the rounding side and leave the other piece on the opposi*de* side thicker, thereby varying the piece sawn from end to end, in some cases injuring the piece so as to render it useless, and also causing friction to the saw.

Q. 20. Have you tried any experiments with the Myers & Eunson saw in cutting lumber with one of the deflecting-plates removed? If

40 so, please state which deflecting-plate you removed before trying the experiment, and what was the result.

A. Yes, sir; I removed the deflecting-plate from the straight side of the saw, and sawed several boards set to a *gua*ge, and I found that they did not follow the *gua*ge, but found that they tapered thinner, and one ran out to a point, or, in other words, cut through the boards; showing conclusively that the Myers & Eu'son resawing machine cannot be used, practically, without the use of two deflecting-plates?

Q. 21. Will you produce any specimen of resawing done by you with the deflecting-plate taken off the straight side of the saw, and explain the same?

A. I produce a bundle of boards, to be marked by the examiner defendants' exhibit No. 9; I have marked the boards "R" on the side which was presented to the rounded side of the saw, and which was the *gua*ge-piece.

And being cross-examined by Chas. F. Blake, esq., deposes and says as follows:

X 22. Have you any interest in these suits?

A. I am one of the plaintiffs in the suit against John Frame, and I own an exclusive interest in the patent for the west side of New York.

X 23. Did you testify in the suit against John Frame tried last May before a jury?

A. I did, sir.

X 24. Did you at that time believe the statements and specifications of the Myers & Eu'son patent were true?

A. I did, sir; at that time.

X 25. Did you then believe that the employment or use of one deflecting-plate would prevent the sawed stuff from bearing against the side of the saw?

41 A. It would only prevent friction from the side on which the deflecting-plate was placed.

X 26. Did you then believe that a circular saw having a deflective plate on one side only could be used practically for sawing lumber?

A. I did not think it could.

X 27. Did you then believe that lumber could be sawed by a circular saw having one deflective plate only in a machine in which the feed was that described in the Myers and Eunson patent?

A. I did not.

X 28. Did you so state in the testimony that you gave at the trial aforesaid?

A. If questioned on that point at that time, I think I must have stated that as my opinion.

X 29. Do you know whether you did or not?

A. I do not remember.

X 30. Do you claim that you were acquainted with the construction of all the resawing-machines used or known in the arts prior to the date of the Myers & Eunson patent?

A. From the year 1851, if any machines were known in the trade for resawing lumber other than those I have mentioned, I think I should have known it, if in use in the vicinity of New York City.

X 31. Then you do not claim to know what have been used outside of New York and its vicinity, do you?

A. I did not know what was used generally in the trade for the purpose of resawing lumber. I had a general knowledge of all kinds of machines that were generally used. I may not have known of some isolated machines. That is what I want to convey by my answer.

42 X 32. Do you claim that you were acquainted with all the resawing machines that were described in mechanical works or letters-patent published in different countries?

A. Not fully, as I have not examined thoroughly all the mechanical works bearing on that subject, nor have I examined the Patent-Office reports. I have seen a copy of the English and French patent, and also the Pearson Crosby patent, and the other patents brought in this case. I don't know that I have ever seen any others bearing on this subject.

X 33. Have you ever looked for any others bearing on this subject among the English and French patents?

A. No, sir.

X 34. Are you acquainted with all the different feeding-devices in sawing-machines known to the arts prior to the date of the Myers & Eunson patent?

A. Subsequently to 1851; all that were generally known.

X 35. State what they were?

A. Roller-feed and hand-feed.

X. 36. Were no other feeds known?

A. Not for resawing.

X 37. Are you acquainted with chain-feed; and if so, when did you learn of it?

A. Yes, sir. I understand the chain-feed to mean what I have called

a carriage-feed. I have known of it ever since I have known about resawing.

X 38. Is not a chain-feed one of the feeds used among the trade in resawing-machines?

A. Will you please explain what you mean by a chain-feed? If it is a carriage feed, I can answer the question.

43 X 39. State what you understand by a chain-feed.

A. The chain that moves the side-rest or stay-log towards the saw, to gauge the thickness of the veneer to be removed from the log.

X 40. Is this the only chain-feed known to you?

A. Yes, sir.

X 41. Do you understand the feed described in the Pearson Crosby patents?

(Objected to, on the ground that the defendant is going into new matter, in which the answers of the witness must be taken as evidence on behalf of the defendant.)

A. I understand the one described in defendants' exhibit No. 4. As I understand it, it is nothing more nor less than the ordinary roller-feed, similar to that on a vertical resawing saw now running on my place.

X 42. What do you understand by the following language on defendants' exhibit No. 4: "Although this gearing may be dispensed with, and the plank be fed forward by other known mechanical means, such as an endless chain?"

(Objection repeated.)

A. In mechanism I understand, by the language of the patent, that planks may be fed forward by plates of iron hinged together and moving by a roller with cogs, drawing link by link, forming what is known as an endless-chain bed, such as were used on the Beardsley planing-machine.

X 43. Do I understand you to testify that no such endless-chain feeds were used in combination with an upright saw prior to 1854?

A. I have never known or heard of one being used.

44 X 44. Do I understand you to testify that no mechanical feed was used with a solid-plate circular bench-saw prior to 1854?

A. I never heard of one, sir.

X 45. In comparing the difference of capacity of sawing of a Myers & Eunson machine with that of other sawing-machines, did you ever compare the capacity of the former machine with that of solid-plate circular saw having a mechanical feed?

A. No, sir.

X 46. When you say that, in using the upright sawing-machine, deflectors are not needed, do you mean to be understood as making that statement as applying to upright saws, however broad?

A. I mean to be understood to convey the idea that deflectors are not needed on upright saws as are generally used for resawing purposes, i. e., about 8 inches in width.

X 47. Suppose the blade of an upright saw were as wide as half the diameter of the saw used in the Myers & Eunson machine; do you mean to say, in that case, that no deflector would be needed?

A. I do not consider it practical to run a vertical saw with a blade of that size. If it could be run, deflecting-plates on the sides would be more of an injury, in my opinion, than a benefit, as the lumber passing along the sides of the deflecting plates would sliver and wedge in between the deflecting-plate and the saw-blade, and thereby cause friction instead of removing friction.

X 48. Do you mean by your last answer to say that the board, after passing the face of the saw, would pass between the deflecting-plates and the blade of the saw?

A. No, sir; but that slivers from the pieces would wedge in between the deflecting-plate and the blade of the saw. The board would pass on.

45 X 49. Are more slivers made by an upright than by a circular saw; and if yea, why?

A. There is not much difference.

X 50. Why would an upright saw throw slivers between the deflector and the saw, while the circular saw would not?

A. The upright saw will not throw slivers to any extent any more than a circular saw, but deflecting-plates, if placed at the sides of a vertical saw, must be placed far enough from the blade to allow the blade to work, which leaves an opening between the plate and the saw; while with a Myers & Eunson circular saw the plates are set in a recess, which prevents slivers from wedging in to any extent.

X 51. Then, for the same reason, deflectors with solid-plate saws would be impossible, wouldn't they?

A. They would not, sir, from the fact that on a circular plate saw a collar is placed on either side of the saw, fitting tightly to and running with the saw, thereby allowing a small deflector to be placed at the side of the collar; and the swell of the collar, which swells towards the centre of the saw, relieves the deflecting-plates to a very great extent from slivers passing in between them and the saw.

X 52. What device, if any, is now commonly in use to relieve the sides of upright saws from the pressure of the board, after it has passed the face of the saw.

A. I have in operation two upright resawing saws. One I have used since 1862, and I do not use on either of them any device for relieving friction, and have never found any cause to do so.

And being re-examined by Frederick H. Betts, esq.:

R. D. 53. In the practical use of the Myers & Eunson machine,

46 in order to gauge such machine for cutting any given thickness of stuff, is the elasticity of any part of the feeding or guiding devices destroyed or removed; and if so, of what part or parts?

A. The elasticity on the *guage* or rounding side is destroyed and made rigid on the rolls and clamp on that side.

EBEN PECK.

Subscribed to before me this 27th day of February, 1871.

ALBERT K. POST,
Examiner, &c.

WILLIAM MYERS, a witness called on behalf of the complainants, and being duly sworn, in answer to interrogatories propounded by Fred'k H. Betts, esq., deposes and says as follows:

Q. 1. What is you name, age, residence, and occupation?

A. William Myers; I am 36 years of age; reside in Newark, N. J., and am a sawyer.

Q. 2. How long have you been a sawyer?

A. I can't tell exactly; since I was a small boy, about 10 or 12 years old.

Q. 3. Are you acquainted with the practical operation of the circular resawing-machine known as the Myers & Eunson machine?

A. Yes, sir; I think I know everything about them.

Q. 4. Have you ever tried the effect, in sawing with said machine, of taking off one of the deflecting-plates at the side of the saw; and, if so, please state the results.

A. Yes, sir; I have tried *at* several times, and some of the results of it can be seen in complainants' exhibit No. 9; some boards you might do very well, but you can't make a good job of it.

Q. 5. Do you consider it practical to resaw with the Myers & Eunson machine with one of the de*f*lectors taken off?

47 A. No, sir; you can't suit the customers with the work it does.

Q. 6. When and where did you try the experiment of sawing with one deflecting-plate off?

A. The last time I tried it was in Newark, where I am now, when I first went over there, about 8 mouts ago; there was a load of 2-inch stuff, the saw-plates was very short, and I thought I would take off one of the side plates so it wouldn't spring so much, so as not to check it. I tried three planks, and I had to put it back again; the result was just the same as shown in complainants' exhibit No. 9: then I put the side plate back and went straight through the whole lot, without altering the machine in any other way.

Q. 7. Do you mean by side plates deflecting-plates?

A. Yes, sir.

Q. 8. Where did you first discover that one def'ecting-plate would not work practically?

A. Well, we tried it a great many times; I think at Mr. Peck's was the first place; I can't tell exactly when the time was; we tried it a great many times when we was getting the saw up; I was not old enough to work at it myself then, but was with my father when we were trying experiments.

I have tried it at D. C. Newell's, that is about five years ago; we couldn't make it work; I tried it in 43d street last winter a year ago.

X 9. When you say, "we tried it a good many times when we were trying experiments," do you mean when they were experimenting, and before the machine was patented?

A. I mean that they tried it after the machine was patented; they tried it because they had a great deal of trouble to make the machine work.

X 10. Did they try it before it was patented?

48 A. Well, I couldn't tell you whether they tried it before or not; I know they tried it after.

X 11. Before your father took out his patent, did he know that two deflecting-plates would work and one would not?

A. I couldn't tell you; I was only just a boy at that time helping him around; I was not a man then, I guess; I suppose I was from 15 to 18 years of age about that time.

X 12. Have you any distinct knowledge of when you first knew that two deflectors would work and would not?

A. Well, I have known it ever since I have known enough to take charge of a saw myself.

X 13. While you was helping your father, did he use one or two deflectors on his saw?

A. He always used two. I have known him to take off one, and run it, and put it back again; it would not work with the one.

X 14. How early in his use of the machine did you know him to take off one, and try it and put it back?

A. Well, I suppose it was about some three years after he had got his patent, when he had his place in 13th street, with two machines in it.

WM. MYERS.

Subscribed and sworn to before me this 27th day of Feb., 1871.

ALBERT K. POST,
Examiner, &c.

ROBERT G. EUNSON, a witness on the part of the complainants, having been by me first duly cautioned and sworn to tell the truth, the whole truth, and nothing but the truth, in the matter of controversy
49 herein, and being examined by Mr. Fred'k H. Betts, of counsel for complainants, deposes and says as follows:

1. Q. What is your name, age, residence and occupation?

A. Robt. G. Eunson. I am 65 years of age. I live at 340 West 32d st., New York. I am special agent of the Pacific Ins. Co. of San Francisco.

2. Q. Are you the Robt. G. Eunson to whom letters-patent No. 10965 were issued on the 23d May, 1854, jointly with John Myers?

A. Yes, sir.

3. Q. Is said John Myers now deceased?

A. Yes, sir.

4. Q. Will you please to state when you first met said John Myers, and what occupation he was in at that time?

A. I first met John Myers in the fall or early winter of 1850. He was at that time employed by Grandine Vanzile as a sawyer, in Bethune st., New York.

5. Q. What was your occupation at the time you met Mr. Myers?

A. I had for some time been engaged in making planing-machines for Mr. Nelson Barlow, in and of Saint Louis. I had come to New York in November of that year with one of said machines, which I put in operation in the mill aforesaid.

6. Q. Had said Myers, before you became acquainted with him, made any experiments in improving machines for resawing or slitting boards; and, if so, to what extent had he gone?

(Counsel for defendant requests the examiner to instruct the witness to narrate in his answer such experiments only as he saw, and to refrain from stating any experiments he may have heard of.)

50 A. After I had got the Barlow machine in successful operation Mr. Myers came to me and stated that he had been plan'ing a circular saw, for the purpose of resawing boards, and that he thought I was the proper man to aid him in perfecting it. He stated to me that he had got a model of his idea made, and exhibited to me a model of a circular sawing-machine having a solid plate and feeding-rollers. I agreed to assist him in perfecting the machine.

7. Q. How long after November, 1850, was it that Mr. Myers exhibited to you this model and you agreed to assist him in perfecting the machine?

A. It was in the month of February, 1851.

8. Q. Now please go on and state what you and Mr. Myers did in perfecting this machine?

A. We discussed the subject of resawing generally, and settled upon the plans of our machine, embracing the principle upon which it should operate, namely, by forcing apart the split portions of a board, taking advantage of the yielding property of wood, so as to allow us to use a

stiffened saw made thin at the edge; in other words, an ordinary veneer-saw with cutting plates or segments of steel, receiving the pressure of the boards upon plates or wedges of metal fastened to the frame of the machine, and feeding the board to the saw by means of feed-rollers with one side adjustable and the other elastic, holding the board by clamping-rollers, one attached to each bed immediately in front of the saw; that on the elastic side having an elasticity independent of its roller-bed; the one on the adjustable side being adjustable by set-screw attached to the adjustable bed. Pursuant to that agreeement, in the early part of March, 1851, I made a drawing of a model of the machine, showing the shaft or mandril, the flange, cutting-plates, deflectors, feed and clamping rollers. I did nothing further with the invention, being otherwise engaged, until the beginning of the year 1852. I think in January, 1852, when I made working drawings for a four-foot machine and proceeded to make a complete set of patterns according to
51 said drawings, from which a machine was made which was completed early in 1853. Said machine was put in operation in the shop of Grandin Vanzile, in Bethune street, New York, by Mr. Myers. In the winter of 1853 and 1854, I can't say the precise date, I commenced making a model of the said invention, which is the one now in the Patent-Office, at Washington.

Q. From what drawings, if any, was this model which you filed in the Patent-Office at Washington made?

A. I used the first drawing for all the parts that it represented. The drawings for the chain-wheels and some other details I made at the time of commencing the model.

Q. Did this drawing from which you made the model show any clamps; if so, in what way?

A. It showed some rollers near the edge of the saw, clamping-rollers in front of the feeding-rollers.

Q. What has become of those drawings?

A. They, in common with many others, were lost in moving my residence.

Q. Did you and Mr. Myers ever file any caveat describing your said invention?

A. We did.

Q. Will you look at the paper now shown you, which the examiner will make complainants' exhibit No. 12, and state whether or not you and said Myers executed the original caveat of which that is a copy?

A. That I have no doubt is a true copy of the caveat entered by John Myers and myself.

(Certified copy of caveat offered in evidence and marked complainants' exhibit No. 12.)

14. Q. When, with reference to the filing of that caveat, were the patterns and drawings for the first full-sized machine made.

52 A. I do not remember the precise date; in fact, I did not keep a record of them.

15. Q. Was it before or after the filing of that caveat?

A. My impression is it was before. I think they were in the machine-shop before the filing of the caveat.

16. Q. How do you fix the time of making the first drawing for the model?

A. I fix it by the fact that I was exceedingly anxious at the time to return to St. Louis. The circumstances of my family requiring my presence there. Mr. Myers was anxious that I should make a drawing of the machine so far as we had completed it before my expected departure.

I was at the same time engaged in making drawings for a Barlow machine somewhat differing in construction from the one in Bethune street, and, though anxious, I did not succeed in getting away from New York, and my youngest son was born on the 4th day of April, 1851, during my absence.

17. Q. When, with reference to the birth of your youngest son, were these drawings made?

A. They were made in the early part of the preceding month, the month of March.

18. Q. In the spring of 1854 did you make any improvement in the deflecting-plates; if so, what was it, and when did you make it?

A. I may state that in making the first machine after the working drawings had gone into the machine-shop in 1852, we came to a conclusion to use a deflecting-plate on the rounding side of the saw, covering the whole flange, in place of the steel wedge, and in February we made another improvement in the deflecting-plate, which consisted in placing it in a recess turned in the flange.

19. Q. Did the clamping-rollers placed in front of the feed-rollers and close to the saw which you have described as shown in the drawing of 1851, and described as presure-rollers in the caveat, differ in principle from the form of clamps afterward described in your patent.

53

(Objected to.)

A. It depends very much upon what is called principle in the case.

20. Q. Did those clamping-rollers have any lateral elasticity independent of the roller-beds or the feed-rollers?

(Objected to as not the best evidence.)

A. Yes; on the elastic side.

Q. Were they intended to hold and present to the saw a thin board, if the feeding-rollers should be spread apart by a thicker board?

(Objected to as immaterial, and not being the best evidence.)

A. They would until opened by the advancing boards.

Q. I notice in defendants' exhibit No. 11 that Mr. Myers is spoken of as having become acquainted with you in June, 1850. Is that the correct date?

A. It is an error; I did not become acquainted with him until the month of November.

R. G. EUNSON.

The cross-examination of this witness reserved by defendants' counsel. Examination adjourned to March 9th, 1871, at 3 p. m.

NEW YORK, *Mch. 9th*, 1871—3 p. m.

Present: counsel as before; and the witness, ROBERT G. EUNSON, being further examined by Fred'k H. Betts, esq., deposes and says as follows, to wit:

Q. 23. In answer to the 5th question, you stated that you were, at the time you met Mr. Myers engaged in making planing-machines for Mr. Nelson Barlow; please state in what machine you had ever seen used the adjustable and elastic roller-beds which you state in your patent had been previously used?

54

A. I had seen them in the Barlow planing-machines. I submit a sketch of the Barlow planing-machine, slightly modified from those that had been made prior to November, 1850; the roller-feed, however, is substantially alike.

Complain'ts' counsel offer in evidence the drawing marked "Comblainants' exhibit No. 13, A. K. P., Exa."

Q. 24. Look at the drawing, com'lainants' exhibit No. 13, and state whether or not any of the rollers in that machine were pressure-rollers, and whether or not there were rollers on the opposite side of the machine to what shown in the drawing, of like construction and operation to those shown in the drawing.

A. The rollers were all driving-rollers; there were no mere pressure-rollers; there were rollers on the other side; they, however, were stationary, and planeing-beds adjustable; the front rollers, shown in the drawing, were elastic, having spring-pressure screw and excentric-couplings between them and the driving-gears. That roller-feed motion was the one that I meant by the word "ordinary" in the patent.

(The last sentence in this answer objected to.)

Q. 25. When you speak, in answer to the last question, of the rollers on the other side being stationary, what do you mean?

A. I mean that they were driving-rollers moving in fixed bearings.

Q. 26. When, in answer to question 24, you speak of the "front rollers" being elastic, to which of the rollers shown in the drawing do you refer?

55 A. I refer to the rollers which I marked "A" and "B," especially; the other roller shown in the drawing was also elastic.

And being cross-examined by Chas. F. Blake, esq., deposes and says as follows:

X 27. Did you invent the form of roller-bed and the mode of operation of the rollers therein, shown in the drawings of the Myers & Eunson patent?

A. Much of the construction of that feed-motion, including the roller-beds, of course, was copied from the Barlow machine.

X 28. Please specify the parts copied from the Barlow machine.

A. The driving-gears, excentric-couplings, and spring-pressure was copied from the Barlow machine, but modified so as to suit the character of a sawing-machine.

X 29. Please describe the modifications mentioned.

A. My memory is not sufficiently clear now, at this distance of time, to enable me to say precisely what the Barlow feed-works were in all their details.

X 30. The Barlow rollers were adjustable on one side and elastic and adjustable on the other, were they not?

A. They moved in stationary bearings on the one side and were elastic on the other. That is, they were stationary on one side and elastic and adjustable on the other. The knife-beds were adjustable.

X 31. The elasticity of the roller-bed was governed by springs bearing against the roller, was it not?

A. In that case.

X 32. Had the roller-bed of the Barlow machine any other peculiar feature?

A. Not that occurs to me at the moment.

56 X 33. What changes did you have to make in this roller-bed to adapt it to your resawing machine?

A. I made the rear bed adjustable; I hung the roller in frames, and Myers and myself devised the clamping or pressure roller in front. We also made a parallel motion by means of screws and chains, by which the beds were moved at right angles with the face of the saw and kept parallel to it.

X 34. By the word moved, in the last answer, do you mean adjustable?

A. I do mean adjustable, as both bed' were adjustable, the one being elastic.

X 35. What was the purpose or function of the elasticity of the rollers in the Barlow machine?

A. It was for the purpose of elastic pressure and yielding, so that a board of unequal thickness, either at the end or edges, might continue to be fed to the planing-knives, notwithstanding such variations in thickness.

X 36. Were the elastic rollers so adjusted that, after the board had left the grasp of the first pair of rollers, a board of greater or less thickness than the one preceding it could be firmly held between the first pair of rollers while the former board was passing between the second pair of rollers?

A. Yes.

X 37. In this respect did they differ at all from the feeding-rollers in the Myers and Eunson patent?

A. Not essentially.

The further cross-examination of this witness is adjourned to March 10th, 1871, at 12.30 p. m.

57 NEW YORK, *March 10th*, 1871.

Present, counsel as before.

And the witness ROBT. G. EUNSON, being further cross-examined by Chas F. Blake, esq., deposes and says as follows:

X 38. Q. You have stated that in the month of Feb'y, 1851, Mr. Myers exhibited to you a model of his idea; please describe that model in all its parts.

A. I did not pay any particular attention to that model; it consisted of a solid saw, set in a plain frame; had feeding-rollers; that is all I recollect about it.

39. X Q. Do you remember how many feeding-rollers there were?

A. I do not.

40. X Q. Do you remember whether they ran in beds or not?

A. I do not.

41. X Q. Can you state anything further in regard to this model than that it had feed-rollers and a circular saw?

A. I think there were small rollers in front of the feed-rollers; I mean small in diameter.

42. X Q. You have read the caveat of Nov. 15th, 1852; does that caveat describe the machine as it existed the time the caveat was made?

A. I presume it does.

43. X Q. Do you find anything in the caveat in regard to clamps?

A. I find in the caveat one friction line-roller and two driving-rollers placed parallel with the face of the saw on the back bed, and arranged so as to be moved towards the saw or from it, (the whole bed.) I find on the front bed one pressure-roller and two driving-rollers, constructed to open and shut in a direction parallel with the saw; I find no other notice of any clamping device.

58 44. X Q. Did the working drawings which you made in Jan'y, 1852, contain any features not described in the caveat?

A. I believe they did.

45. X Q. State what features they were.

A. They contained adjustable journal-boxes, as bearings for the small rollers, which had set screws to define the range, and were provided with springs, so that on either side of the saw the bed could be made elastic or adjustable merely. There were screws, 4 screws on each side

of the machine, controlling the position of the beds, connected together by means of chains and chain-wheels, that moved the screws on each side simultaneously and gave a parallel motion to the beds. There were also springs intervening between the points of the screws and the roller-bed on both sides; there was a provision for rendering either bed rigid by means of pieces of iron that could be placed between the points of the screws and the beds, at pleasure. These pressure-screws were hollow, and were confined to the roller-beds by rods passing through them, and having screw-nuts outside the end of said screws. I mean by small rollers the clamping-rollers between the feeding-rollers and the saw. These are the points of differences which strike my mind at the present moment.

The cross-examination of this witness is further adjourned to March 10, 1871, at 7.30 p. m.

NEW YORK, *March 10th*, 1871—7.30 p. m.

Present, counsel for both parties.

And the witness ROBT. G. EUNSON, being further cross-examined by Chas. F. Blake, esq., deposes and says as follows, to wit:

59 46. X Q. Please state whether, since the adjournment this afternoon, anything has occurred to you which you wish to add to your last answer.

A. I may merely add that the drawings made were complete full-sized detail drawings, from which the patterns were made and the machine finished. They represented the driving-gears, eccentric couplings, bevel-gears and cone-pulleys, just as they were executed on the machine which is still in operation.

47. X Q. When did you first complete a machine constructed according to the Myers and Eunson patent, and put it into operation?

A. As near as I can recollect, the machine was finished in the early part of 1853; whether in January or February I can't say. I did not put that machine in operation myself; that was done by Mr. Myers, and I cannot recollect the precise time when he put it in operation. I have reason to think, however, that it was before October of that year.

48. X Q. Do you know what was the diameter of the saw of that machine?

A. It was 48 inches.

49. X Q. Did you construct or know of the construction of other machines, constructed according to the specification of the patent, prior to the date of your application?

A. There were none.

50. X Q. The caveat states, "In saws not exceeding 13 inches, we intend to use one plate only, screwed fast to the disc." Do you still consider that to be a mode of construction proper to be used in the Myers and Eunson saw?

A. I see no reason why it should not, but we have never made any.

51. X Q. The Myers & Eunson patent describes the deflectors,
60 one or both, placed at the side or sides of the saw; do you still consider that to be a proper mode of constructing the Myers & Eunson sawing-machine, when the diameter does not exceed 36 inches?

A. Yes, sir.

52. X. Q. Will youplease look at defendants' exhibit No. 10, and state whether the statement therein contained, as sworn to by you, so far as they relate to the date of the invention and its history, are true?

A. I find one error here. It is stated in June, 1850; it ought to have

been in November, that I made the acquaintance of Mr. Myers. I wish also to say that in the passage which runs as follows, beginning:

"The said Myers being at that time, etc.," and extending to the words, "two-thirds interest in the machine," if the words "that time" have reference to the before-mentioned date, "June, 1850," they would not be correct.

The date may be correct so far as any arrangement between Myers & Vanzile, but I had nothing to do with it at that time.

The exhibit No. 10 states that flexible clamps, independent in their action of the roller-beds, were added in the spring of 1854; they must have been completed in the early part of the year 1854, in January or February. In other respects it is correct.

The witness here desires to state that the time when the deflecting-plate was placed in a recess of the flange of the saw, occurred after the Myers & Eunson application for their patent had been made, and previous to the date of said patent; believed it to be in the month of March, 1854; and, in this respect, the witness desires to correct his answer to .

And being re-examined by Fred'k H. Betts, esq., deposes and says, as follows:

R. D. 53. In answer to X Q. 43 you state that there were "small rollers, the clamping-rollers, between the feeding-rollers and the
61 saw;" were those clamping-rollers provided with any springs behind their journals, or other means for rendering them elastic?

A. They were provided with India-rubber springs, and also with stop-screws, which could either limit or destroy said elasticity.

R. D. 54. Did said clamping-rollers, in the projected operation of said machine, have a lateral elasticity independent of the roller-beds and feeding-rollers with which they were combined; and if each of said clamping-rollers did not have such elasticity, state which one of them did.

A. They did have such elasticity, both roller-beds, and the small rollers attached were so constructed that either bed with its small rollers could be deprived of its elasticity and used as the line side of the machine, at pleasure.

R. D. 55. What was the purpose of said clamping-rollers?

(Objected to as immaterial.)

A. The purpose of the clamping-rollers was to hold the board firm, so as not to be affected by the slight jar communicated to the feeding-rollers by the action of the driving-gears, in addition to the purpose of holding the extreme end of the board leaving the machine as long as possible after the succeeding board had opened the forward feeding-roller.

R. D. 56. In answer to X Q. 51 I understood you to state that it is a proper mode of construction of the Myers & Eunson sawing-machine, in case the saw does not exceed 36 inches, to use either one deflecting-plate alone, or both deflecting-plates. Do you wish to be so understood?

A. That was not my intention to answer in that way. I referred, in that answer, to the use of a solid plate rather than a sectional plate. I do not consider it a proper mode of constructing the Myers & Eunson machine, with only one deflecting-plate on one side of the ma-
62 chine. I never have constructed the Myers & Eunson saw otherwise than with the two deflecting-plates.

R. D. 57. Do you consider that it is a proper mode of construction of a solid-plate circular saw of 36 inches diameter, to provide it with one deflecting-plate only?

A. I do not; for the reason that in that case the saw is not relieved from the pressure of the board, which produces heating of the saw, buckling, and so on.

R. D. 58. In answer to X Q. 51 and R. D. 56 did you mean to be understood to state that it would be a proper mode of construction to use one deflecting-plate only with a solid-plate saw?

A. That is not the way I wish to be understood. I never have used the Myers & Eunson machine with other than two deflecting-plates.

And being recross-examined by Chas. F. Blake, esq., deposes and says as follows:

R. X 59. Did you ever consider the use of one deflector a proper mode of construction of the Myers & Eunson machine?

A. I made experiments with that machine at an early date of its existence, but found I could not work successfully with one.

R. X 60. How early were these experiments completed?

A. I can't tell you.

R. X 61. Was it before or after your application for a patent?

A. I can't even answer that. I cannot remember the date.

R. G. EUNSON.

Subscribed and sworn to before me this 10th day of March, 1871.

ALBERT K. POST,
Examiner, &c.

63 Adjourned to March 11th, 1871.

NEW YORK, *March 11th*, 1871—1 p. m.

Present, counsel as before.

Complainants' counsel offers in evidence an office copy of an assignment, by Pearson Crosby to John Gibson, of the patent, defendants' exhibit No. 4, for Albany County, State of New York, dated April 5th, 1856, and marked "Complainants' Exhibit No 13;" also an office copy assignment by Daniel H. Carpenter to John Gibson of the Meyers & Eunson patent for Albany and Rensallaer Counties, dated 9th April, 1856, marked "Complainant's exhibit No. 14;" also a certified abstract of all assignments of the Pearson Crosby patent, defendants' exhibit No. 4, from the date of said patent to the date of the Myers & Eunson patent, May 23d, 1854, marked "Complainants' exhibit No. 15."

Counsel for the defendants objects to the admission of these documents as immaterial.

It is agreed by counsel for both parties that the complainants may produce, at the hearing of this case, the original model of the Myers & Eunson machine, from the Patent-Office.

Complainant's counsel also put in evidence an assignment by the defendant, Nichols & Robbins, of a certain interest in the Myers & Eunson patent, marked "Complainants' exhibit No. 16."

Examination closed on the part of the complainants.

64 *Complainants' exhibit No. 6.*

United States circuit court, eastern district of New York.

JOHN MYERS ET AL.
vs.
WHITMAN KENYON ET AL. } In equity.

DANIEL DONCASTER, of the city of Albany, being duly sworn, says,

that he is a manufacturer of wood-working machinery in the city of Albany; that about the year eighteen hundred and fifty he was engaged as foreman in the saw and planing mill of John Gibson, in the city of Albany, and had full charge of mills, and was so engaged for about nine years, and that soon after he went there said John Gibson commenced building a machine for resawing lumber with a circular saw; that the saw used for the purpose was what is called a swedged or taper saw, i. e., a saw which is thick in the centre and ground tapering from near the centre to outer edge of the saw; that upon each side of said saw and for the purpose of stiffening the saw was a flange or collar about twelve inches in diameter and about three-fourths of an inch thick in the centre, and which tapered down to a sharp edge at the outside. That said saw was hung in a wooden frame with a wooden bed. That for the purpose of diverting the lumber from the sides of the saw, and prevent the lumber from binding upon and heating the saw, plates of iron were attached to the saw-bed on each side of the saw and so adjusted as to open the board and to expand the saw-kerf, and prevent the lumber from rubbing against the sides of the saw. That said iron plates
65 were about two inches wide and stood about two inches high, nearly parallel with the saw, and that said plates fully answered the purpose for which they were devised, and that said plates were made at the suggestion of said John Gibson or some one in his employ, and without any previous knowledge that such plates had been used for such purpose.

Deponent further saith that the said resawing machine was used in the city of Albany for resawing of lumber, between the year eighteen hundred and fifty-one and eighteen hundred and fifty-three, in the mill of said John Gibson.

DANIEL DONCASTER.

Sworn and subscribed to before me this seventh day of May, A. D. '70.
[NOTARIAL SEAL.] GEORGE W. SHERMAN,
Notary Public, Albany Co., N. Y.

Complainants' exhibit No. 12.

To the Commissioner of Patents:

The petition of John Myers, and Robert G. Eunson, of the city, county, and State of New York, respectfully represents:

That they have made certain improvements in the application of circular saws to the purpose of resawing boards and plank and other forms of material, and that they are now engaged in perfecting the same preparatory to applying for letters-patent therefor. They therefore pray that the subjoined description of their invention may be filed as a caveat, in the confidential archives of the Patent-Office, agreeably to the provisions of the act of Congress in that case made and provided; they having paid twenty dollars into the Treasury of the United
66 States, and otherwise complied with the requirements of said act.

JOHN MYERS.
ROBERT G. EUNSON.

NEW YORK, *Nov. 3d*, 1852.

The following are particulars of our improvements: We make our saw nearly three times as large in diameter as the width of the boards intended to be sawn; it is made as follows, for the largest size: Upon

a shaft or mandril of suitable size we fasten a disk of wrought iron, the face of which we turn at right angles with the centre of the shaft, but the back is turned thin towards the edge and tapered so as to leave it thick toward the shaft; upon the face of this disk are screwed plates (similar to a common veneer-saw) on which are the teeth; these plates project their whole thickness beyond the face of the disk, and leave towards the shaft a reserved space equal to their thickness; within this space and fastened to the frame work of the saw is a plate or steel, placed so as not to touch the saw, but so as to project slightly beyond the face of the plates and to form a guide to the board and keep the same from touching the saw-plates on the side and making friction thereon. In the angle formed by the back of the saw-plates and the back of the disk we place a triangular piece of steel, which is also fastened to the frame work of saw so as not to touch the same, but to present to the advancing board a wedge which will deflect the same from the back side of the saw, give clearance, and so prevent friction; and beyond the saw, opposite to its edge, we place another wedge, also fastened to the frame, so as to prevent the boards after they are separated from falling upon the saw.

In saws not exceeding 36 in. we intend to use one plate only, screwed fast to the disk.

67 Our feed-motion consists of a back and front bed of driving-rollers; the back bed has two driving and one friction line rollers, placed parallel with the face of the saw and arranged so as to be moved toward or from the saw at pleasure, and has an index that always shows the exact thickness of wood that will be left on the face side of the saw. The front bed has also two driving and one pressure-roller, and is also constructed so as to open and shut in a direction parallel with the face of the saw, and is provided with springs so as to give an elastic pressure to the board and to adjust itself to inequalities in its thickness, so as to hold it firm between the front and back bed and advance it upon the saw with steadiness, regularity, and force; the front, and back rollers are drove each by a spur-wheel which mesh together; between the said wheels and the rollers they drive, respectively, are placed an excentric coupling, which is of such a nature as to communicate the rotary motion from the wheel to the roller, although they are not in line with each other. (The inventor of the said coupling, R. G. Eunson, will soon make application for a patent for the same.)

The motion of the feed is regular, and will allow each tooth of the saw to remove a like quantity of wood.

In advance of the feed-rollers and in line with the back bed we place a knife so as to cut off the stub short, smooth with the face of the board; on the other or spring side we place another similar knife, but connected with the pressure-roller, so that the knife is thrown back when the board is presented, but takes its place upon the surface when the end of the board reaches the pressure-roller, and cuts off the stub short when it reaches the same. We use another knife like the latter upon the upper edge of the board, which takes a shaving off its whole length and

68 also takes off its stub short; this last is of great practical importance, as it removes the grit from that part of the board with which the saw-teeth come in contact.

JOHN MYERS.
ROBERT G. EUNSON.

Please address to R. G. Eunson No. 1 7th avenue, N. Y.

Complainants' exhibit No. 13.—*A. K. P., ex'r.*

Whereas letters patent of the United States were, on the eighth day of March, 1851, duly issued to Pearson Crosby, of Fredonia, New York, for improvements in resawing by circular saws;

And whereas John Gibson, of Albany, New York, is desirous of purchasing the exclusive right to the said letters-patent for, within, and without the counties of Albany and Rensselaer in the State of New York:

Now, this indenture witnesseth, that for and in consideration of the sum of one dollar to me in hand paid, the receipt whereof is hereby acknowledged, I, the said Pearson Crosby, have assigned, sold, and set over, and do assign, sell, and set over to the said John Gibson, his executors, administrators, and assigns, all the right, title, and interest which I have in and to the said letters-patent, and in and to the invention covered by the same, for, within, and throughout the counties of Albany and Rensselaer, in the State of New York.

The same to be held and enjoyed by the said Gibson, his executors, administrators, and assigns, for his and their own use, benefit, and behoof to the full end of the term for which said letters-patent are granted, as fully and entirely as the same would have been held and enjoyed
69 by me, had this assignment and sale not been made, and any and all re-issues of said letters-patent which may hereafter be procured by me, shall enure to the benefit of said Gibson, his executors, administrators, and assigns, for, within, and throughout said specified territory.

And I do further, for the consideration aforesaid, transfer, assign, and set over to said Gibson, his executors, administrators, and assigns, all my right, title, and interest in and to all uncollected damages, compensation, and profits, and all claims, causes of action, and rights of action, whether at law or in equity, for or growing out of the infringement within the counties of Albany and Rensselaer, in the State of New York, or within either of said counties, of said letters-patent.

And I do hereby authorize and empower said Gibson, his executors, administrators, and assigns, to prosecute for, in his own name, and to recover to his own use said uncollected damages, compensation, and profits.

Witness my hand and seal this fifth day of April, 1856.

[SEAL.] PEARSON CROSBY.

Sealed and delivered in the presence of—
DARIUS KNAPP.

Rec. and rec'd, April 11th, 1856. Ex'd: E. H.

Complainants' exhibit No. 16.

Whereas John Myers and Robert G. Eunson, both of the city of New
Int.-rev. stamp, 5 cents, cancelled. York, did obtain letters-patent of the United States of America for improvements in sawing-machine, which letters-patent bear date May 23d, 1854;

And whereas, by virtue of and pursuant to certain assignments and transfers, duly recorded in the United States Patent-Office, in
70 liber Q 3, page 72; liber Q 3, page 73; liber J 7, page 257; liber I 5, page 234; liber G 5, page 373, and liber I 5, page 235, of transfers of patents, as by reference to the same will more fully and at large appear, one Reid R. Throckmorton, of New York City, did acquire and obtain certain rights under said letters-patent;

And whereas the said Reid R. Throckmorton did, on the 19th day of August, 1864, by a certain assignment and transfer, bearing date on that day, duly transfer, convey, and assign unto John M. Nichols and William O. Robbins, doing business in the city of New York, under the firm-name of J. M. Nichols and Company, the entire right, title, and interest of him, the said Throckmorton, of every character, under and connected with the said invention and the letters-patent aforesaid, which said assignment is duly recorded in the United States Patent-Office, in Liber, N. 7, page 153 of transfers of patents;

And whereas Gilbert J. Bogert and Eben Peek, both of the city of New York, have purchased our entire right and rights of every character, under and connected with said letters-patent and the invention aforesaid:

Now this indenture witnesseth that we, John M. Nichols and William O. Robbins, (composing the said firm of J. M. Nichols and Company,) both of New York City, for and in consideration of one dollars to us in hand paid by the said Gilbert J. Bogert and Eben Peek, the receipt whereof is hereby acknowledged, have assigned, transferred, and set over, and by these presents do transfer, convey, and set over unto the said Gilbert J. Bogert and Eben Peek, their legal representatives and assigns, our entire right, title, and interest of every nature and character whatever, in, to, and under, or connected with the said invention and the letters-patent aforesaid, being the right to use one of Myers and Eunson's patent sawing-machines within the district of the city of New York, bounded as follows, viz:

[Three 2-cent int. rev. stamps, cancelled.]

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On the north by Fourteenth street, on the east by Broadway, on the south by Canal street, and on the west by the Hudson River; the same being the entire right and interest acquired as aforesaid by the said Throckmorton, and by the said Throckmorton transferred and conveyed as aforesaid to us; the same to be held and enjoyed by the said Gilbert J. Bogert and Eben Peek for their own use and behoof, and for the use, benefit, and behoof of their legal representatives and assigns, to the full end and term for which said letters-patent have been and are granted, as fully and entirely as the same might or would have been held and enjoyed by us had this assignment, transfer, and sale not been made.

In witness whereof we, the said John M. Nichols and Willam O. Robbins, have hereunto set our hands and affixed our seals, this eighteenth day of January, in the year one thousand eight hundred and sixty-five.

J. M. NICHOLS. [SEAL.]
WM. O. ROBBINS. [SEAL.]

Sealed and delivered in the presence of—
JOHN MYERS,
MATTHEWS MANCK.

U. S. Patent-Office, received Jan'y 23, and recorded Jan'y 27, 1756, in Liber, S. 7, page 392 of transfers of patents. In testimony whereof I have caused the seal of the Patent-Office to be hereunto affixed.

[SEAL.]
J. S. S.

D. P. HOLLOWAY,
Com's. of Patents.

72 U. S. circuit court, southern district of New York.

MARGARET MYERS, EXECUTRIX, AND OTHERS, *vs.* JOHN DUNBAR AND OTHERS. } In equity.

Testimony taken for final hearing, on behalf of the defendants, under and pursuant to the 67th rule in equity, as amended, before Albert K. Post, an examiner of the U. S. circuit court for the southern district of New York.

73 NEW YORK, *February* 10, 1871—11 a. m.

Present, Frederick H. Betts, esq., of counsel for complainants, and Charles F. Blake, esq., of counsel for defendants.

Counsel for defendants puts in evidence in all the above cases pages 809 to 813 inclusive of the 2d volume of Holtzapffel's Mechanical Manipulation, published in London A. D. 1847, being a description of a machine for sawing veneers, marked "Def'n'ts' exhibit. No. 1."

Also English letters-patent No. 1065, sealed on the 2d day of November, 1853, marked "Defdts.' exhibit No. 2."

Also a certified copy of American letters-patent, re-issue No. 458, of an original patent, dated November 3d, 1841, granted to Pearson Crosby for an improved saw-mill for resawing boards and other lumber, marked "Dftds.' exhibit No. 3."

Also a certified copy of American letters-patent No. 8022, dated April 8, 1851, granted to Pearson Crosby, marked "Defdts.' exhibit No. 4."

Also a certified copy of letters-patent of the United States, granted to M. Andrews and J. Sproat, dated Dec. 31, 1839, marked "Compl. exhibit No. 5."

Examination adjourned to February 23d, 1871, at 11 a. m.

NEW YORK, *February* 23, 1871—11 a. m.

Present, counsel, as before.

Counsel for the defendants offers in evidence the three affidavits of H. B. Renwick, marked Defendants' Exhibits, Nos. 6, 7, and 8, and which counsel for the complainants agrees shall be read at the hearing with like force and effect as if taken as a regular deposition in these causes.

74 *Defts.' ex. No. 6.—A. K. P., ex'r.*

Circuit court of the United States, eastern district of New York.

JOHN MYERS ET AL. *vs.* WHITMON KENYON ET AL. } In equity.

SOUTHERN DISTRICT OF NEW YORK, *ss:*

HENRY B. RENWICK, of the city of New York, being duly sworn, deposes and says that he is fifty-two years of age, and by profession a civil and mechanical engineer; that he has been in engaged in pursuits connected with his profession for the last thirty years, has been a principal examiner in the U. S. Patent-Office, and has for the last 17 years been frequently examined as expert in suits in which patents were in question in the circuit courts of the United States for various circuits.

Deponent further saith that he has been familiar with saw-mills of various kinds for more than 30 years, and has been acquainted with slitting mills, or mills for resawing lumber, for some 15 years or more.

Deponent further saith that he has examined a copy of the patent granted to John Myers and Robert G. Eunson, No. 10965, dated May 23, 1854, for improvement in machines for sawing lumber into thin boards, and understands the contents thereof, and the machine and invention described therein.

75 Deponent further saith he has examined a model marked "F," in ink, on the brass saw thereof, and with the initials "H. B. R." scratched thereon, in which the heavy cast-iron clamps of the actual machine are represented by clamps of sheet brass, and said to be a model of the machine used by the respondents in the above-entitled case; and has also examined a working machine at the factory of John Dunbar, in this city, which is in substantial accordance with said model, and which deponent has been informed is identical with the machine used by respondents in the above-entitled case.

Deponent further saith that he has this day, at the office of C. M. Keller, esq., examined a model, said to be the model of defendant's machine used on the trial of the case of John Myers and others *vs.* John Frame and others, before Mr. Justice Woodruff, in the United States circuit court in the city of New York.

Deponent has further lately re-examined a work with which he has long been familiar, viz, Holtzapffel's Mechanical Manipulation, published in London A. D. 1847, especially at pages 809 to 813, inclusive, of the 2d volume, being a description of a machine for sawing veneers; and has lately examined English letters patent No. 1065, A. D. 1853, sealed on the 2d day of November, in the official copy thereof as published by the English government.

Deponent saith that the invention described in said American patent No. 10965, to Meyers and Eunson, and specified in the first claim thereof is the employment of one or two deflecting plates at the side of the saw, the one plate being a duplicate of the other, and each performing substantially the same duty, viz, that of spreading the sawed timber away from and so as not to touch the saw; and deponent finds identically such a plate performing the same duty, applied at the side of the saw, and with its edge located between the axis of the saw and the cutting part of the saw, described and represented in the volume of Holtzapffel aforesaid, said plate being of metal, and properly supported and sustained in position so as to perform its duty, and

76 being employed in connection with a circular veneer-saw composed of segments bolted upon a thick central plate; and deponent has no doubt that this publication describes the invention specified in the first claim of the patent to Myers and Eunson aforesaid.

Deponent further saith that the patent to Myers and Eunson describes ten clamps, each of which is identical with the other, and each of which is elastic with reference to a roller-bed, and mounted thereon in a peculiar way, viz, in such a way that each of said clamps can turn as upon a vertical axis, so that its grasping-surface can be parallel with or inclining to a plane passing through the saw; and deponent believes that such clamps are useful, and will act as described in the said patents, and will hold boards, grasping them until the unsawed ends thereof reach the saw, and, in fact, until the board to be resawed is entirely cut apart, even although boards of differential thickness be there introduced between the feeding-rollers, or between the clamp-jaws; and these clamp-jaws, in order to produce this effect, must have a lateral elas-

tic movement, independent of the roller-beds, and must be so mounted as described as to swing upon a vertical axis, in order to compensate for the varying thicknesses of stuff, and keep therein a proper relative position to the saw until the cut is completed.

In the model used in the trial at New York as aforesaid, and said to be the machine of the defendants in that case, there is one clamp, which has a lateral elastic movement independent of the roller-bed, on one side of the machine, and which has also the capability of swinging upon a vertical axis, substantially described in Meyers and Eunson's patent, and will produce the effect of one of those clamps; and this clamp of the defendants' in the trial aforesaid was substantially identical in all respects with one of the clamps of Myers and Eunson aforesaid. In the model of respondents' machine, (H. B. R.,) and in the machine of Mr. John Dunbar, identical therewith, there is no clamp which has a lateral elastic movement, independent of the roller-bed, or which
77 has any swinging motion upon a vertical axis, as described in Myer and Eunson's patent; but on the contrary, one of the clamps in the said model has no lateral elastic movement at all in relation to the saw, or to the roller, or anything else, but is a fixed and permanent clamp, permanent so long as a board or boards are to be slit at on a certain line, and adjustable only when no board is being sawed. This clamp has none of the peculiar characteristics of either clamp of Myers and Eunson's patent, and is substantially different from them.

The other clamp of the model of respondents has a lateral elastic motion with reference to the saw, and is in that respect like the rollers of old re-sawing machines, but it has no lateral elastic motion, independent of the roller-bed, to which said clamp is attached, and is fixed fast to that roller-bed, and moves only when the roller-bed moves. It is wanting, therefore, in the first peculiar characteristic of the clamps of Myers and Eunson's; and as it has no capacity to swing so as to change its angle with reference to the face of the saw, it is wanting in the second characteristic also. Even if the capacity of swinging be considered immaterial, this clamp is unlike Myers and Eunson's, it being fixed to and moving laterally with the roller-bed; whereas the clamps of Myers and Eunson are not fixed to the roller-bed, but on the contrary, have a lateral movement independent thereof, and are specified as of his invention only when they have such lateral independent motion, and when two such clamps are employed, it not appearing from the patent that one clamp, even if it be identical with one of those described in the patent, is of their invention; but that their invention consists in the employment of two such clamps, both of which are necessary in order that "either side of the saw may be made the line side," and boards of uneven width be held firmly at the same time in the machine.

Deponent is satisfied that each of the clamps of the respondents is substantially different from the clamps of the model used in the trial at New York as aforesaid, as a model of the defendants' machine, and from either of the clamps of the Myers and Eunson machine.

78 Deponent further saith, that the English patent aforesaid is for a machine for resawing boards with a circular saw, and with beds containing or supporting pressure and feeding rollers, by means of which the boards are compressed and presented to the saw. On the line side of the saw of this machine there is a roller-bed provided with two rollers, adjustable but not elastic, and upon this bed there is a third and shorter roller, shortened so that it may lie close up to the upper part of the saw, but inelastic and having no lateral motion. This roller guides and supports one side of the plank, after it has passed

between the feed-rollers, and is identical in the duty it performs and the way of performing it, and is therefore a substantial equivalent of the clamp upon the line side of the model marked "H. B. R.," and said to represent the respondents' machine. Opposite to the roller-bed in the English machine are two roller-beds, each containing a roller just as in the model last referred to, (viz, that of respondents' machine,) and the one of these beds which is nearest the saw supports a third and shorter roller which occupies the place of and performs the duty of one of the elastic clamps of the respondents' model and the John Dunbar machine seen by me (viz, that clamp opposite the line side.) This roller, like the respondents' clamps, has no lateral elastic movement independent of the roller-bed, and its boxes cannot swing upon a vertical axis, like the Myers and Eunson clamps, but it lies close up to the saw, and guides one side of the plank just as the respondents' elastic clamp does, and as the elastic clamp of the John Dunbar machine does. In fact the only difference in regard to the clamps between the English machine and that of the respondents is that in the one the clamping surfaces are friction-rollers, while in the other they are smooth plane surfaces, well-known equivalents of each other in mills of the resawing class, and the respondents use the English patented clamps, and not the clamps of Myers & Eunson.

Deponent is in doubt as to what is the invention specified in the 4th specification of claim of the patent to Myers & Eunson; the parts
79 there claimed in combination will not permit "the stiffened or rounded side of the saw" to be "made the line side," unless there be also a deflecting plate upon the stiffened side of the saw. When such stiffened side is thus made the line side, and the ends of the clamps embrace the saw as described in Myers & Eunson's patent, then it is useful, if not absolutely essential, that the clamp upon the line side should have a lateral elasticity with respects to the bed, and also the swinging motion.

In the respondents' machine, as illustrated by the model marked "H. B. R.," and in that of John Dunbar, neither the clamp on the line side or the other clamp have a lateral elasticity with respect to the roller-bed, or a swinging motion, and one of them, that on the line side, has no lateral motion whatever when the machine is at work. Whatever may be the inventiom specified under the fourth head in patent No. 10965, the combination of parts therein set forth certainly includes the clamps, that is, clamps constructed and operating substantially as described in the patent, and if those clamps are wanting in respondents' machine, as they are, then the respondents' machine cannot contain the invention described in Myers & Eunson's patent and specified in the fourth claim thereof, and deponent believes that it does not contain said invention.

The machine of respondents has no knives or cutters for removing stub-shot, and does not contain the invention specified in the third claim of Myers and Eunson's patent.

As a summary of the whole, deponent believes that the invention specified in the first claim of Myers & Eunson's patent, was described and published in 1847, and that respondents' machine does not contain the inventions described in said patent and specified in the 2d, 3d, and 4th claims thereof.

HENRY B. RENWICK.

Sworn to before me this 12th day of May, 1870.
[SEAL.]
E. STEPHENSON,
Notary Public, New York County.

80 *Defendants' exhibit No. 7.—A. K. P., ex'r.*

Circuit court of the United States, eastern district of New York.

JOHN MYERS ET AL.
vs.
WHITMON KENYON ET AL. } In equity.

SOUTHERN DISTRICT OF NEW YORK, *ss:*

HENRY B. RENWICK, of the city of New York, being duly sworn, deposes and says, he is the same person who made an affidavit in the above-entitled case, sworn to before E. Stephenson, notary public, on the 12th day of May, 1870; and since that time he has seen and examined a certified copy of American letters-patent, being re-issue 458 of an original patent dated Nov. 3d, 1841, granted to Pearson Crosby, for an improved saw mill for resawing boards and other lumber, and that the machine described in this patent is one of those which he had in mind when speaking of old resawing machines in his former affidavit.

In this machine of Crosby, the rollers *e e* are the rest or fence rollers; the rollers on the line side of saw; rollers that have no lateral motion when a plank is in the machine, and the same as the rest-rollers of John Dunbar's machine, of the model of respondents marked "H. B. R.," and of the English patented machine, all referred to in the former affidavit.

In this machine of Crosby, the rollers *i i* are the elastic rollers
81 of the same machines, and are like them in the fact that each of them can approach a plane passing through the face of the saw without the other approaching; or in other words, have a lateral motion and a lateral elasticity independent of each other, so that the roller *i* farthest from the saw can be holding a thick board firmly against one of the fence-rollers, while the roller *i*, nearest the saw, is holding a thin board firmly against a fence-roller, and vice versa, so that boards of different thickness can be grasped in the machine at the same time.

This function of the machine is due to the mounting of the rollers *i i* upon a carriage composed of two horizontal pieces *k k*, which are free to swing upon a vertical axis *l*, to which the force, pressing the rollers *i i* upon the plank or planks, is applied, either end of this carriage and consequently either roller can approach or recede from the plank without any change of position of the other roller, or one roller can approach while the other recedes, or vice versa.

Deponent has also, since May 12, seen and examined a certified copy of American letters-patent, No. 8022, dated April 8th, 1851, for the invention of Pearson Crosby, and says that the machine therein described is the machine described in the English patent No. 1065, A. D. 1853, referred to in deponent's former deposition.

In the drawings of this American patent, the rollers *f f* f^1 are the fence-rollers inelastic, and, while a board is being sawn, immovable, they being substantially identical with the fence-rollers and clamp on the fence side of model H. B. R., and John Dunbar machine. In this patent, the roller *s* farthest from the saw has a bed in which it is mounted, and is forced toward the board by a screw and spring, as in model H. B. R., and the John Dunbar machine, and as in those machines, it can approach or recede from the plank without any motion of the roller *s*, nearest the saw.

The roller *s* nearest the saw is mounted in the same way as the further one, and has a motion independent of the further one. Therefore *s* furtherest from the saw can grasp a thick board, while *s* nearest

is grasping a thin one, and vice versa, just as in model H. B. R. and in the John Dunbar machine, and these rollers *s s* have this capacity
82 because their beds or carriages are separate from each other and because they are pressed upon by opposite ends of the compound-spring *v*, which is forced towards the board by the screw *w*, bearing near the middle thereof, in the whole construction being such that the two ends of the spring can move independently of each other.

Upon the roller-bed *t* of roller *s* nearest the saw is mounted the short roller s^1; this roller moves only with the bed *t* of the feeding-roller *s* nearest the saw, grasps the plank after it has passed that roller, has no lateral motion independent of the roller-bed *t*, and is in all respects the substantial equivalent of the clamp opposite the line or fence rollers of the John Dunbar machine and model H. B. R.

HENRY B. RENWICK.

Subscribed and sworn to before me this 20th day of May, 1870.
[SEAL.] WM. CLITUS WITTER,
Notary Public, N. Y. Co.

Defendants' exhibit No. 8.—A. K. P., ex'r.

Circuit court of the United States, eastern district of New York.

JOHN MYERS ET AL. *vs.* WHITMON KENYON ET AL. } In equity.

SOUTHERN DISTRICT OF NEW YORK, *ss:*

HENRY B. RENWICK, of the city of New York, being duly sworn, deposes and says that he is the same person who has heretofore
83 made two affidavit in the above-entitled case; one sworn to before E. Stephenson, notary public, on the 12th day of May, A. D. 1870, and the other before Wm. Clitus Witter, on the 20th day of May, A. D. 1870, and that he to-day has examined a certified copy of letters-patent of the United States, granted to M. Andrews and J. Sproat, December 31, 1839, and that in said patent is described a deflecting plate for the purpose of keeping the sawn material from contact with the side of the saw, said deflecting plate being substantially identical with one of the deflecting plates described in the patent No. 10965, granted to Myers & Eunson, and performing the same duty.

Deponent further saith that the deflecting plate on one side of the Myer & Eunson saw performs precisely the same duty as the plate upon the other side of the saw, and that after a deflecting plate has been used upon one side of the saw, it requires no invention to apply another plate performing precisely the same duty upon the other side of the saw, that such second application is a mere duplication of the first, in the same manner as would be the making of a window in one side of a room where a window had been already made in another side, or the placing of struts on both sides of a wall to support it after struts had formerly been applied upon one side of a wall.

HENRY B. RENWICK.

Sworn to before me this 22d day of December, 1870.
[SEAL.] ALBERT K. POST,
Notary Public, New York County.

84 DANIEL DONCASTER, a witness called on behalf of the defendants and being duly sworn, deposes and says, as follows:

Q. 1. What is your name, age, residence and occupation?

A. Daniel Doncaster. I am forty-seven years old. Reside in the city of Albany; and am a machinist.

Q. 2. What was your business in the year 1850?

A. Machinist.

Q. 3. In whose employ were you, and in what capacity were you employed?

A. John Gibson, of Albany. I had charge of his shop.

Q. 4. While you were in Gibson's employ did he build a machine for resawing lumber? If he did, please describe it.

A. Yes, sir; he did. The best way to describe it is by showing this drawing.

(Witness here produces a drawing, marked by the examiner "Defts.' exhibit No. 9.")

Of course Gibson's machine was a ruder machine than the one shown in the cut, and built principally of wood. It had two pair of feed-rollers driven overhead by universal joints; this one, shown in the drawing, is driven from below. Gibson's was fed by the same style of cones as shown in the cut, only made of wood and driven from overhead. The stuff was advanced to a swedged saw, just as shown in the drawing, with cast-iron collars, to divide the stuff in the centre. I guess that is about the whole of it.

Q. 5. What device, if any, was there in Gibson's machine to keep the lumber from the side of the saw?

A. There were two little pieces of iron—we called them clips, I don't know if that is their proper name—one on each side of the saw and set about even with the periphery of the collar and back of the mandrel. That was all the device we had.

Q. 6. About how large were these clips?

A. They were of a right angle, or square, some four inches at the base and about three inches high.

85 Q. 7. What office did these clips perform when you were running boards over the saw?

A. They spread the stuff and prevented it from heating the collars.

Q. 8. When was this machine completed?

A. Well, the best I can get at it, it was done in 1851 or 1852; in 1851, I think.

Q. 9. Can you state any circumstances which leads you to think it was in 1851? and, if you can, do so.

A. I get at it, because I have a boy who is 20 years old this month, and I went to work with Mr. Gibson the day before he was born.

Q. 10. How long have you been with Mr. Gibson when he began the construction of this machine?

A. About a year, I think.

Q. 11. How long was he building it?

A. Probably, three or four months.

Q. 12. How long did you remain with Mr. Gibson after this machine was completed?

A. I remained with him till the Woodworth patent expired. That must have been five or six years. It was in 1856, I think, the patent expired.

Q. 13. Did you see the Gibson machine operated; and, if so, how often and how long?

A. It ran successfully during the whole balance of the time, and is

running yet. I saw it run, and it ran every day, as long as we had work for it.

Q. 13½. Have any changes been made in said machine since 1851; and, if yea, what are they?

A. No material change.

And being cross-examined by Fred. H. Betts, esq., deposes and says as follows:

Cross-q. 14. What was the date of the commencement of your employment by John Gibson?

A. I couldn't give you the day. It was somewhere about the last of summer or the coming on of fall. The coming on of fall, I think it was, in the year 1850.

86 Cross-q. 15. What month was it?

A. I couldn't tell whether it was August, or September, or November. It might have been either of those three months.

Cross-q. 16. Was the sawing-machine that you have mentioned built under any patent; and, if so, whose was it?

A. It was built under the Crosby patent. That was the only one we knew of at the time.

Cross-q. 17. Do you mean the Pearson Crosby circular resawing-machine patent?

A. Yes, sir.

Cross-q. 18. Had Mr. Gibson purchased any interest in said patent; if so, what was it?

A. He had the right of the vertical saw. Whether he had the right of the circular saw at that time I can't say.

Cross-q. 19. He did have a right to the Pearson Crosby circular resawing machine for Albany County, did he not?

A. Yes, sir.

Cross-q. 20. Do you know when he purchased that?

A. I do not.

Cross-q. 21. Do you know whether it was before he constructed the machine you have described?

A. I do not.

Cross-q. 22. Who planned the construction of said machine?

A. Edward Rork did the most of it.

Cross-q. 23. Where does Mr. Rork reside?

A. He is dead now. He did reside in Albany. His brothers are living.

Cross-q. 24. What are his brothers' names?

A. Samuel and George.

Cross-q. 25. Did Samuel and George Rork have anything to do with the planning or constructing the said machine?

A. No, sir.

Cross-q. 26. Did they know of its construction at the time?

87 A. Yes, sir.

Cross-q. 27. Who else besides Edward Rork had anything to do with the planning and construction of the machine?

A. Well, I don't think there was much of anybody else except myself that had anything to do with the planning and constructing.

Cross-q. 28. Who made the saw?

A. I am not certain. It was either Gregory or Pruyn & Lansing. The latter bought out Gregory, and I don't know whether they had bought him out at that time. It may have been a party by the name of Blake. The firm has shifted several times in twenty years.

Cross-q. 29. Where is the establishment at which that saw was made?

A. I think that Pruyn & Lansing have it now. Mr. Gregory started a saw-factory with Pruyn & Lansing. The factory is in Liberty street, near the corner of Pruyn, in Albany.

Cross-q. 30. Who suggested the use of the clips you have described?

A. Edward Rork.

Cross-q. 31. How came he to suggest their use?

(Objected to as incompetent.)

A. I couldn't say, unless he being a practical sawyer.

Cross-q. 32. When the saw was first built did it not have in the rear of the saw a separator, such as is shown in the drawing defendant's exhibit No. 9.

A. That ain't a separator. It had a thin piece of iron to prevent the board falling on to the saw, so as not to fall back and hurt the operator.

Cross-q. 33. Did it have a contrivance standing in the rear of the saw similar to that shown in defendant's exhibit No. 9, and which I mark "X?"

A. It had something similar to that.

Cross-q. 34. Was this device, similar to "X" in Exhibit No. 9, in a line with the saw, and was it thicker than the saw?

88 A. It was.

Cross-q. 35. For a very considerable time after the sawing-machine you have described was constructed, was there not a great deal of trouble with it on account of the saw heating from the contact with the sawn stuff?

A. Yes, sir.

Cross-q. 36. Were not the clips you have described adopted as the final expedient to prevent such heating?

A. Not final. There were other difficulties.

Cross-q. 37. What other difficulties do you mean?

A. We got our collars too large and too thick.

Cross-q. 38. Any other difficulties?

A. Nothing more than would occur in any new thing getting up.

Cross-q. 38½. Did you adopt the clips you have described before or after you lessened the thickness of the collars?

A. Before.

Cross-q. 39. Did they work successfully before you lessened the thickness of the collars?

A. No, sir.

Cross-q. 40. In answer to X Q. 37, you said, "We got our collars too large and too thick." Did you make the changes in the size and thickness of the collars at the same time, or was one a separate change from the other?

A. At the same time.

Cross q. 41. Did you ever try any other device for preventing the saw from heating besides the use of the clips you have described?

A. Yes.

Cross-q. 42. Please describe such device or devices.

A. We put a spreader on, behind the saw and in a line with it, similar in position to the part marked "X" in defendant's exhibit No. 9, but thicker.

Cross-q. 43. What did you call the device like X for "preventing the board falling onto the saw," which was upon the machine as at first constructed, as stated by you in answer to X-questions 32, 33, and 34?

A. I think we called it a reaping-hook, or something of that kind, or a guard; we had no mechanical name for it.

89 Cross-q. 44. How long after the saw was first built did you use

or attempt to use it, with the reaping-hook or guard you have described?

A. We kept it on all the while.

Cross-q. 45. Did you not have to remove it when you used the spreader you have described?

A. Do you mean when we used the big spreader to experiment with? Then we removed it.

Cross-q. 46. How long was it after the machine was built that you first used the spreader?

A. It was along when we were experimenting with it.

Cross-q. 47. When was that?

A. In the year 1851 or 1852.

Cross-q. 48. How do you fix the time?

A. By the age of my boy.

Cross-q. 49. Why cannot you fix it more definitely than you do?

A. Because all the books and papers were burned in 1857.

Cross-q. 50. You have not stated how long it was after the machine was completed before you used the spreader. If you can state how many weeks or months it was, please do so.

A. I cannot.

Cross-q. 51. How many times, and during how long a space of time, did you use the spreader?

A. I couldn't say. Mr. Rork done more of that little titivating than I did.

Cross-q. 52. Was it one month or six?

A. It might have been one; it might have been six.

Cross-q. 53. How did the machine work with the spreader on it? Was the spreader successful in preventing the heating of the saw?

A. It was not; the flanges got hot.

Cross-q. 54. What was the next device used to remedy the heating of the saw?

A. The clips.

Cross-q. 55. What was the form of clip which was first used on that machine?

90 A. It was a piece of iron of about an inch and a half to two inches wide, bent up at a right angle, with the front edge sharpened. The iron was about half an inch thick at the back, and sharpened to an edge, and stood up about three inches high.

Cross-q. 55. This was the form, was it, that was used before the collars were made smaller and thinner?

A. Yes, sir.

Cross-q. 56. How did those clips differ from the ones that were finally adopted?

A. There was no material difference.

Cross-q. 57. Please state how long it was that those clips were used, or attempted to be used, with the flanges thick and large, as you have stated they were at first.

A. It was not more than a week or ten days before we began to cut them down. The saw didn't work well and we at once began cutting them down.

Cross-q. 58. Did you alter the size and thickness of the flanges several times before you got the clips to operate successfully?

A. No, sir; not several times, but we altered the flanges several times as the saw wore smaller.

Cross-q. 59. You have stated, in answer to cross-questions 38½ and 39, that the clips did not work successfully before you lessened the thick-

ness of the collars. How many times did you so alter them before they did work successfully?

A. I couldn't say.

Cross-q. 60. Was it once or six times.

A. It was once, certainly, but I couldn't say if it was six times. It might have been more and it might have been less.

Cross-q. 61. Who altered the thickness of the collars?

A. I couldn't give the name.

Cross-q. 62. Was it done in the shop or out of it?

A. Yes, sir; in the shop.

Cross-q. 63. How long a time was occupied in the various alterations of the collars that you have mentioned?

91 A. That depended on what was done to them. Sometimes they would take a little off, that would take a little while; and sometimes they would take a good deal off, and that would take a good deal of time.

Cross q. 64. Can you state how much time, in weeks or months, elapsed between the time the first alteration in the collars was made and the time when the final alteration was made?

A. I cannot.

Cross-q. 65. Was it one month or six?

A. It might have been one; it was less than six.

Cross-q. 66. Can you state positively that it was less than six?

A. I think I can.

Cross 67. Have you anything to fix your recollection definitely on that point?

A. Yes, sir.

Cross-q. 68. What is it?

A. That mill ran by custom-work, and was only run about eight months in the year; and we done a season's work with this the first year we went to work.

Cross-q. 69. What time does the season commence?

A. As soon as the ice breaks up and the boats come up the river; and it closes as soon as the river freezes.

Cross-q. 70. The season commences then?

A. Along about the 1st of April; at least, so we used to calculate.

Cross-q. 71. During the time that you were making use of the spreader you have described, and making the alterations in the collars, were you doing work as the same came in as well as you were able?

A. Yes, sir.

Cross-q. 72. Was it in doing, or in endeavoring to do, your custom-work that you experienced the difficulties about the heating of the saw that you have described?

A. Partially; we took some of our own lumber to experiment with, but we experimented a good deal with custom-lumber.

92 Cross-q. 73. Did you experiment with your own lumber during the same time that you were experimenting with custom-lumber?

A. Yes, sir.

Cross-q. 74. Can you state positively how many months were occupied in making the patterns and frame of the machine you have described, and in setting it up before you commenced experimenting with it on lumber?

A. No, sir.

Cross-q. 75. Can you state positively that it was less than six months?

A. No, sir.

Cross-q. 76. Are you engaged in the manufacture of wood-working machinery?

A. Yes, sir.

Cross q. 77. Please state if the circular now shown you, and marked "Complainant's exhibit No. 6," is one of your circulars.

A. Yes, sir.

Cross 78. Are you familiar with the Myers & Eunson resawing-machine?

A. No, sir.

Cross 79. Do you know that Mr. Gibson, in whose employ you were, bought a right under the Myers and Eunson patent for Albany County?

(Objected to as immaterial and incompetent.)

A. I don't know it, but I understand he did. I believe he did.

Cross 80. Do you remember the time?

A. I do not.

Cross 81. When did you first hear of it?

A. I could not say.

Cross 82. Did you have charge or anything to do with the experiments that were made with the machine, which you have described, at Mr. Gibson's?

A. Yes, sir.

Cross 83. What did you have to do?

A. I had charge of all the mechanical work.

93 Cross 84. While you were at Mr. Gibson's, was there a son of Mr. Gibson's in his employ; and, if so, what was his name?

A. Yes, sir. His name was John Gibson, jr.

Cross 85. Where is he living now?

A. In Albany.

Cross 86. Who ran the Gibson machine when it was first set up?

A. Edward Rork.

Cross 87. Did he have anybody to assist him; and, if so, who was it?

A. Yes, sir; I don't remember the man's name.

Cross 88. Who else besides Mr. Rork, that you know, ran the Gibson machine prior to 1856?

A. I couldn't tell you.

Cross 89. Who else besides Mr. Rork and yourself were in the estab ment of John Gibson prior to 1856 as operators?

A. I couldn't name the operators.

Cross-q. 90. Can you name any of them?

A. No; I don't think I can.

Cross q. 91. Can you name any superintendent?

A. John Gibson, jr., William Dalton, and, I think, William Quigley. I won't be sure about Quigley.

Cross-q. 92. Where does William Dalton reside?

A. In Albany, on Ten Broeck street. I can't tell the number; nearer to Clinton avenue than any other street.

Cross-q. 93. Where do Dalton and Quigley work now?

A. Dalton is in the lumber-trade on Water street, the corner of Lumber street. The firm is Dalton & Kibbe. Quigley is in Albany, somewhere in the lumber-district. He can be found there in summer.

Cross-q. 94. Please look at the certified copy of letters-patent marked "Defts.' exhibit No. 4," and state whether or not that is the patent you referred to in answer to cross-questions sixteen and seventeen.

A. That is the patent.

Cross-q. 95. Was the saw you have described as in use at Mr. Gibson's a solid-plate saw or a veneer-saw?

A. A solid plate.

94 Cross-q. 96. Now, can you state positively that that saw was used at said John Gibson's after the spreader had been discarded and the collars finally lessened, as described by you in answer to cross-questions 38½, 39, 59, and 60, so that the saw would work properly prior to the 1st of January, 1853?

A. I think I can.

Cross-q. 97. Have you anything to fix your recollection on that point?

A. No, sir; nothing only what has been before stated.

Cross-q. 98. Did you, on the 7th of May, 1870, sign and swear to the affidavit now shown you, and which the examiner will mark "Complainants' exhibit No. 7?"

A. Yes, sir.

(Complainants' counsel puts in evidence this affidavit, Exhibit No. 7.)

Cross-q. 99. Have you any better means of fixing the time of the completion and operating of the Gibson saw than you had when you made said affidavit?

A. No, sir.

DANIEL DONCASTER.

Subscribed and sworn before me this 23d day of February, 1871.

ALBERT K. POST,
Examiner, &c.

95 Circuit court of the United States, southern district of New York.

MARGARET MYERS, EXECUTRIX, AND OTHERS, *vs.* JOHN DUNBAR AND OTHERS. } In equity.

NEW YORK, *March* 6, 1871—11 a. m.

Present, Frederick H. Betts, esq., of counsel for the complainants, and Chas. F. Blake, esq., of counsel for defendants.

Counsel for the defendants puts in evidence a copy of the statement of the value and importance of their invention, by John Myers and Robert G. Eunson, and an account of receipts and expenditures, filed in the Patent-Office in the matter of the application of John Myers and Robert G. Eunson for an extension of letters-patent granted to them May 23, 1854, which said paper is marked "Defendants' exhibit

96 No. —," and is admitted by complainants' counsel as of the same effect as if duly certified from the Patent-Office.

Examination of witnesses adjourned to March 7, 1871, at 11 a. m.

NEW YORK, *March 7th*, 1871—11 a. m.

Present, counsel as before.

HENRY B. RENWICK, being recalled on behalf of the defendants, and being duly sworn, in answer to interrogatories proposed by Chas. F. Blake, esq., deposes and says as follows:

Q. 1. What do you understand the words "ordinary, adjustable, and elastic beds between which the stuff is fed to the saw," to mean, in view of the state of the art at the date of the Myers and Eunson's patent? These words are found in the second paragraph of the specification under the head "Secondly."

A. By the adjustable bed, is meant the bed on the line side of the saw; this bed was sometimes, prior to the date of the patent, a mere

fence or short plank without any rollers in it, along the side of which the plank was fed and by means of which it was guided. It was sometimes a bed containing one or more rollers, none of which were feed-rollers, and in other cases some of these rollers were feed-rollers. The ordinary elastic bed, prior to the patent, was a frame containing one or more rollers; sometimes these rollers were none of them feed-rollers, and sometimes they were; but this bed was in all cases forced toward the plank, so as to cause the rollers to bear upon it by means either of springs or weights. The object of the elastic bed and the adjustable bed, constructed in any of the known ways, was to hold the plank in proper position with respect to the saw, the plank being gripped between them, as in any ordinary clamp, one saw of which is fast and the
97 other moveable. The timber or board to be reslit was fed between these beds, sometimes by an endless chain with hooks upon it, the chain being mounted on rollers with horizontal axes, and shoving the board forward, as the cars are shoved in the Greenwich-street elevated railway. In other cases the board was fed between these beds by means of horizontal feed-rollers, the rollers below the plank being stationary, with the plank resting upon them, and the rollers above the plank being forced down upon it by means of weights. In this way the plank was gripped upon its upper and lower edges, and fed between the elastic and the adjustable beds. In other cases the rollers, or some of them, supported in the beds (the rollers, I mean, which guide the plank to the saw,) were driven by proper machinery, and, in addition to performing their office as clamping-rollers, also fed the plank. In still other cases, there was no automatic feed, and the plank was shoved between the adjustable and the elastic beds by the hand. The fence without rollers, which acts as, and is, an adjustable bed, is described in defendants' exhibit No. 3, which also states that the feeding operation may be performed by other means than the rollers which are supported in the elastic and adjustable beds. In defendants' exhibit No. 4 there is a statement that none of the rollers, either in the adjustable or the elastic bed, shall have gearing attached to them, and that the plank may be fed forward by other known mechanical means, such as an endless chain; so that, in both these patents, there are described both adjustable and elastic beds, none of the rollers in which are feed-rollers. The words ordinary adjustable bed, therefore, mean a bed adjustable transversely across the saw, either with or without rollers; and, if with rollers, having the rollers acting as both clamping and feed-rollers, or as clamping-rollers only, the feeding, in the latter case, being performed by hand, or some apparatus proper for the purpose. By the words ordinary elastic bed, I understand that a bed is meant which contains rollers which, by the elasticity of the bed, are pressed against the side of the plank, whether such rollers be both feed and clamping rollers, or clamp-
98 ing-rollers only, or whether some of them be both feed and clamping rollers, and the others clamping-rollers only.

(All the above answer objected to on the ground that the evidence and opinions therein contained should properly have been made a part of the testimony of the defendants taken before the plaintiffs opened their rebuttal.)

Q. 2. Please state how the holding of the extreme end of the plank is effected in the Myers & Eunson machine.

A. It is effected by means of the two clamps described in that patent, one of which must, of necessity, be not only elastic, independently of the adjustable bed, but also have the capacity of varying the angle between its face and the side of the saw; the construction described

in the patent for effecting this latter object being the mounting of the clamp upon a journal or axis, so that it can swing like a door. If there were no clamp attached to the adjustable bed, then the extreme end of the plank could not be held in position by the clamp attached to the yielding bed, for the reason that if the clamp attached to the adjustable bed were dispensed with, the plank after it left the rollers would be pressed upon on one side only and the tendency would be to shove the plank out of place instead of holding it in place. If the clamp attached to the yielding bed had not the capacity of swinging, but could move only parallel to itself as the adjustable bed does, then the extreme ends of their plank could not be controlled at all when a thicker plank followed it; because, as soon as the thicker plank came between the grasp of the clamps, at the point where they are furthest from the saw, then it would shove the clamp attached to the yielding bed bodily backward, so that all parts of it would be at least as far from the side of the saw as that part of the clamp which is mounted in the yielding bed. As soon as that happened, the clamp would let go of the board which is being sawn, and the extreme end of the stuff would not only cease to be held firmly, which is the action described in the patent, but would cease to be held at all.

(Objection repeated.)

99 Q. 3. Do you find in the defendants' exhibit No. 5 Frame, the clamps of the Myers & Eunson patent?

(Question objected to by counsel for compl'ts. Counsel for defdts. states that this question is asked to make good the omission of Mr. Renwick to fully discuss it in his affidavit, which omission has come to the notice of defdts.' counsel since said affidavits were put in evidence.)

A. I do not. I find one of the clamps of the Myers & Eunson patent, and on the other side I find only the ordinary adjustable bed with three rollers in it, the one nearest the saw being certainly as far from the saw as it usually is in such machines.

(Objected to.)

Q. 4. Will you please look at the testimony of Mr. Treadwell on the 8th page and at the 22d folio of the printed record in the case of Myers vs. Kenyon, and state whether you agree with the opinion there expressed, and give your reason.

(Objected to.)

A. The statement, which I suppose is referred to, is this: "This independent elasticity of the clamps and feed-rollers I understand to be the subject-matter of the claim of patent." This language, I ununderstand, refers, in the first part of it, to the defendants' machine. Now, in the defendants' machine, as is afterwards admitted by Mr. Treadwell, the clamps are secured to a bed containing a feed-roller; in addition to this, neither of the clamps in defendants' machine have that swinging motion which it is absolutely essential that at least one of them should have in order to control the end of the board in the manner as described in the patent; thirdly, the statement of the nature of

100 the invention in the patent under the second head, says, that the invention "consists in the employment or use of elastic clamps attached to the ordinary elastic and adjustable beds between which the stuff is fed to the saw," and the second claim claims the employment or use of the clamps "I I," etc., "so as to have a lateral elastic movement independent of the roller-beds for the purpose of compensating for the varying thicknesses of different pieces of stuff and keeping them in a proper relative position to the saw," the corresponding statement to this latter phraseology in the paragraph relating to the invention being, "by

holding firmly to the extreme end of the stuff and keeping it in proper position to the saw, however much the elastic bed may be expanded." Now, there is no statement in either the nature of the invention or the claim that the elastic clamps are to be attached to beds containing feed-rollers. No statement that the independent elasticity of the clamps and feed-rollers is the thing invented or claimed. On the contrary, the statement is that the stuff is to be fed to the saws between the ordinary adjustable and elastic beds. I understand the invention set forth in the patent, under the second head, to be the combination of two clamps, one of which has both a sidewise and a swinging motion with two beds, one of which is elastic and the other of which is adjustable, whether the rollers be both feed and pressure rollers or whether they be pressure-rollers only, and whether there be an automatic feed in the machine or whether it be fed by hand. It is true that the description of the preferred machine is one in which the rollers, contained in the beds, are feed-rollers, but I do not understand that the invention is limited to that class of machine of which the pressure-rollers are also feed-rollers. On the contrary, a machine, which had an adjustable and also an elastic bed with clamps attached to them substantially as Myers & Eunson's are, and acting substantially as Myers & Eunson's do, would contain their invention, and control the plank in the manner described by them as the object of the second head of that invention even if the
101 machine had no feed-motion of any kind and the plank were fed by hand.

(Objection repeated.)

Q. 5. Prior to the date of the Myers and Euson patents, were resawing-machines known in the arts, through which two boards of different thicknesses could be resawn without the machine losing its hold upon them, when both boards were in the machine at the same time?

(Objected to, for the same reason as before stated, and further, that no notice was given of the examination of Mr. Renwick concerning the use of prior machines, to that as described in the patent.)

A. Such machines were known. They are described in patents, and I have also seen them in operation.

In the old reslitting machine with a reciprocating saw, many of which I have seen in use, and one form of which is described in defendants' exhibit No. 3, the elastic bed has the capacity, not only of moving to and from the board parallel to itself, but also of swinging upon an axis, as the Myers and Eunson clamps do. The elastic bed is shown in this patent at "*k k*;" it is forced towards the board by the spring-lever "*m*," and it is free to turn upon the axis of one of the adjustable pressure-rollers. In this machine, therefore, two boards of different thicknesses could be and were both controlled by the clamp at the same time, both being held firmly clamped between the adjustable and the elastic beds. In this machine, when made in a form shown in the drawings, with a thin board gripped between the rollers nearest the saw, that board will be fed mechanically, while the board which follows it, and is furthest from the saw, will be pushed forward by hand; but, if the feeding-operation be performed by other means known prior to this patent, as provided for in this patent, Exhibit No. 3, then the board furthest from the saw would likewise be fed automically. In the machine described
102 in defendants' exhibit No. 4, the two elastic rollers, "*s s*," each mounted in its own elastic bed, so that they can move to and from the plank independently of each other, will compress, guide, and control two boards of different thicknesses at the same time. If the machine be made in the form represented in the drawing, the hindmost board will

have to be shoved forward by hand; but if the machine be constructed as provided for in the description of the patent, with the gearing which drives the rollers dispensed with, and other known mechanical means than vertical feed-rollers used for feeding the boards, then both the thick and the thin board will be fed forward automatically; but in neither of these machines will a thin board be controlled at its end when a thick board is between the ordinary rollers, mounted in the ordinary beds, which are nearest to the saw, and in this respect the old machines are unlike the Myers and Eunson and are like the defendants.

Q. 6. Please compare a little more fully the difference between the Myers and Eunson machine and the machines described in the patents just spoken of, with respect to the duration of the control, which these respective machines have over the board while passing through them.

(Objected to.)

A. In the machine described in the first patents to Pearson Crosby, no board is controlled at all after it has passed that roller in the adjustable bed which is nearest the saw. In the second patent to Crosby, showing the circular saw, a thin plank is not controlled at all, after a thicker plank has entered between those long rollers, which are nearest the saw. This is the case also in the defendants' machine; but in the Myers and Eunson machine with two clamps, one on each side of the saw, one of which is both yielding and swinging, any one plank being sawn, whether followed by a thicker or a thinner one, is grasped, controlled, and properly presented to the saw until it is entirely cut
103 through; its extreme end is controlled until entirely sawn through. In this function, and the mechanical construction by which this effect is produced, the Myers and Eunson saw-mill differs from all previous machines known to me and from the defendants'.

Q. 7. Please make the same comparison between Exhibit Frame No. 5 and the machines described in the Myers and Eunson patent.

(Objected to.)

A. Exhibit Frame No. 5 has one of the Myers and Eunson clamps only; in it after a board has passed the roller in the adjustable bed nearest the saw, it is pressed upon on one side only, without anything to resist the pressure except the saw itself. The tendency of the clamp at that time in that machine is not to guide and control the end of the plank, but to force it out of line, so that the cut through it will be curved instead of straight.

Q. 8. As you understand the Myers and Eunson machine, is it essential that either of the clamps should be mounted upon a vertical axis, so that it can swing so as to be parallel with or inclined to the plane of the saw?

(Objected to.)

I have already stated, in substance, that this peculiarity of construction is essential to the action of the Myers and Eunson clamps.

Q. 9. As you understand the Myers and Eunson patent, does it describe the clamps as independently elastic, with respect to the feed-rollers, as distinct from the roller-bed?

(Objection continued.)

A. It does not. It states distinctly that the clamps are to be "attached to the ordinary adjustable and elastic beds;" it states further that the stuff is kept "in proper position, however much the
104 elastic bed may be expanded, by a succeeding piece of stuff of greater thickness. It states, further, if the last piece of stuff is rather thicker than the preceding one, it merely acts upon the beds and orces the elastic one still further from the permanent one.

I therefore think the description of the patent is that the clamps are to be independently elastic of the bed, and not of the feed-rollers; although as I have before stated that in describing the whole machine.

The further direct examination of this witness is reserved by the counsel for the defendants, until the drawings of the Myers and Eunson patent can be produced.

And being cross-examined by Frederick H. Betts, esq., Mr. Renwick deposes and says, as follows:

Cross-q. 10. In the Myers and Eunson machine, the boards being fed to the saw between feeding-rollers, as described in said patent, would the use of a single deflecting plate upon one side of the saw tend to increase the friction of the board being cut on the other side of the saw?

(Objected to as not relating to the subject-matter of the witness' direct examination.)

A. I think it would where the piece left on the line side was thin and the rollers some inches from the saw, as is usually the case. The increase, however, would be trifling.

Cross-q. 11. Please look at the Myers and Eunson patent and state whether you consider the words "ordinary adjustable and elastic beds," in the preliminary statement of the second part of the invention, to fairly include adjustable and elastic beds, in which there are no rollers whatever, whether pressure or feed?

A. I do, as respects the adjustable bed; because, as I have stated, I have often seen a fence used as an adjustable bed. The elastic bed I have never seen without rollers in it.

Cross-q. 12. Do you read or understand the words, "the ordi-
105 nary adjustable and elastic beds," to mean the same as if it had been written the ordinary adjustable bed, and the ordinary elastic bed?

A. I do.

Cross-q. 13. Are not both of the beds described in the Myers and Eunson patent both adjustable and both elastic?

A. No, they are not, when the machine is in operation. I quote from the patent, "either side of the saw may be made 'the line side,' by fixing permanently or destroying the elasticity of the proper roller-bed." I quote further, "the roller-bed in line with the deflecting-plate '*e*' is permanently fixed at $\frac{1}{4}$ of an inch from the side of the saw," and further, "the opposite of the saw may be made the line side by permanently fixing the opposite roller-bed and allowing the other one to remain elastic."

Cross-q. 14. In the construction of the machine are not both of the beds described as adjustable and elastic?

A. They are; but the statements I have quoted show that the elasticity is to be removed from *from* one bed or destroyed before the machine will work.

Cross-q. 15. Will you look at the disclaimer immediately preceding the first claim of the patent, to wit, "We do not claim the adjustable and elastic roller-beds, F F, for they have been previously used;" and state whether or not those adjustable and elastic roller-beds there disclaimed are described anywhere in the patent, as anything different from the ordinary adjustable and elastic roller-beds mentioned in the second statement of invention.

A. I do not understand that they are.

Cross-q. 16. Is it not with the adjustable and elastic roller-beds, which are disclaimed, that the clamps I I are claimed, in combination, in the combination of the second claim?

A. As I understand, it is.

Cross-q. 17. Now will you look at the top of the 3d page of the printed specification and state whether or not the adjustable and elastic roller-beds, which are disclaimed, and with which, as you say in answer to the last question, clamps are claimed as combined, are not feed-roller beds? I call your attention to the following language:

"F F, Figs. 1 and 2 are two feed-roller beds."

106 A. I have already noticed that language in the patent, and also the sentence below, "H, H, H, are feed-rollers placed in the bed F, F." I have no doubt that the beds F, F are those disclaimed, and that claim No. 2, includes the clamp in combination with adjustable and elastic beds, both when the rollers in them are feed-rollers and when they are not feed-rollers, for reasons before given.

Cross-q. 18. Will you point out, if you can, any part of said patent, where the rollers in the beds with which the clamps are combined are described as anything but feed-rollers?

A. I quote: "Our invention consists in the employment or use of elastic clamps attached to the ordinary adjustable and elastic beds, between which the stuff is fed to the saw." Now, to a person conversant with the state of the art, that language describes adjustable and elastic beds containing rollers which are not feed-rollers, just in the same way as the use of the word steam-engine in a patent describes to one conversant with the state of the art, known forms of piston, valve, and valve-gear, and other parts making up a steam-engine; or in the same way as the words "four-motion feed" in a sewing-machine patent described sufficiently clearly to one conversant with the state of the art, a smooth yielding surface and a roughened surface, acting to grasp the cloth between them, the latter being so mounted and so provided with mechanical accessories that it will move up or down, and backwards and forwards to feed the cloth.

Cross-q. 19. Do you consider that the words "ordinary adjustable and elastic beds," include both beds and rollers of any kind?

A. No, I don't. They include adjustable and elastic beds so combined with each other as to grasp a plank and present it properly to a saw which were known prior to that patent.

Cross-q. 20. In answer to cross-q. 15, you stated, did you not, in substance, that you understood that the words "ordinary and adjustable elastic beds" meant the same thing as "adjustable and elastic roller-beds, "F, F?"

107 A. I stated that the beds F, F, were not different from the ordinary elastic and adjustable roller-beds mentioned under the second head of the invention. I did not say that the words meant the same thing. The words "ordinary adjustable and elastic roller-beds," as I have before stated, described to me not only the roller-beds especially shown in the drawing, but all elastic and adjustable beds suitable to be used in resawing, used or described prior to the date of the Myers and Eunson patent. The words "ordinary adjustable and elastic roller-beds," certainly include the roller-beds described in the patent, and the beds F, F, named in the disclaimer; and I think that the words of the disclaimer were meant to convey a meaning as wide as that conveyed by the words "ordinary adjustable and elastic roller-beds" in the statement of invention; although I am not positive on that point. I am certain of this point, that any known adjustable and elastic beds would be the equivalents of those specially described in the patent, for the purpose of carrying rollers and supporting a swinging and adjustable clamp,

and that is all the office the adjustable and elastic roller-beds perform in the Myers and Eunson machine.

Cross-examination adjourned to March 8th, 1871, at 11 a. m.

NEW YORK, *March* 8, 1871—11 a. m.

Present, counsel as before; and the witness, Mr. H. B. Renwick, being further cross-examined by Fred. H. Betts, esq., deposes and says as follows:

Cross-q. 21. In answer to direct question 4, you say as follows: "It is true that the description of the preferred machine is one in which the rollers contained in the beds are feed-rollers." Will you please look at the patent, and point out any place where it is stated that the patentee' prefer feed-rollers in their bed, or use anything but feed-rollers, except the single phrase "ordinary adjustable and elastic beds in the
108 second statement of invention," which I understand you to say that you consider implies the use of other rollers than feed-rollers.

A. There is no statement in the patent in so many words that the patentees prefer feed-rollers in the bed. I used the wood as it is ordinarily used in speaking of patents, which describe modifications and in which the precise machine shown in the drawing is usually denominated a preferred form. There is no other phrase than the one referred to which describes the use of rollers which are not feed-rollers, in either the adjustable or elastic bed.

Cross-q. 22. Your argument, then, that the patent includes a combination of elastic clamps, substantially like those in the patent, with elastic and adjustable beds, other than feed-roller beds, is drawn from the use of the word "ordinary" in the second statement of the nature of invention?

A. Yes; and also from other statements in that second clause of invention and from the second claim.

Cross-q. 23. Please to point out the particular words in the second clause of invention which countenances that opinion.

A. The second clause of invention states in substance that the stuff is to be fed between the beds, which are the ordinary elastic and adjustable beds. It does not say that it is to be fed between feed-rollers; it says that the clamps are to have an elasticity independent of the bed. It does not say they are to have an elasticity independent of the feed-rollers. The second paragraph, also taken as a whole, states that "the object of the invention is to hold the stuff firmly, however much the bed may be expanded, and not however much the feed-rollers may be altered in position.

Further, the object of the second part of the invention, taken as a whole, is not to feed the stuff in a particular manner, and hold it firm, but simply to hold it firm, when of different thicknesses and at the extreme end. There is no statement in the second nature of invention that the boards are to fed automatically, nor that any particular
109 feeding-device is requisite in order that the functions for holding and controlling the board or boards may be performed, and the fact is that in all these resawing machines the feeding functions are entirely independent of the guiding and controlling functions. In further answer to the question, I quote all the words in the second statement of invention. I cannot pick out particular ones.

Cross-q. 24. Do you find in the second claim the word "ordinary" coupled with the words "roller-beds," mentioned with which the clamps are claimed in continuation?

A. I do not find the word "ordinary" used in the second claim at all.

Cross-q. 25. Are you familiar with the ordinary adjustable and elastic bed used in the Barlow planing-machine?

A. I do not know that machine.

Cross-q. 26. You have stated that you consider the mounting of at least *of* one of the clamps in the Myers & Eunson machine so as to swing upon a vertic*le* axis, as one of the essential features of those clamps. Now, will you please state whether the mounting of one at least of the clamps in that way has any effect in giving the clamps an elastic movement independent of the roller-beds.

A. No. Clamps can be so mounted as not described in the patent, so that they would have an elastic movement independent of the bed, and would not be able to swing in the manner described in the patent.

Cross-q. 27. The question is not whether clamps mounted in a different way may not have an elastic movement independent of the roller-beds, but whether the mounting the clamps on a vertic*le* axis gives them an independent elasticity from the roller-beds.

A. You may mount the clamp on a vertic*le* axis and leave out the spring, and then the clamp will have no elasticity with reference to the adjustable bed. One of the clamps described in the patent as attached to the elastic bed is so elastic with reference to the bed, as I have before said, in order to perform the functions of the machine as set forth in the patent, that it can both not only move to and from the stuff, but also turn so as to alter the angle of its face with reference to the saw. That species of elasticity it cannot have without both the axis and the springs, or some equivalent for the axis.

Cross-q. 28. Does the swinging motion of the clamp render it independently elastic of the roller-bed?

A. I have already answered that question. The swinging motion alone does not render it independently elastic, and that both the springs and the swinging device are necessary in order to enable the clamp to have the elasticity and perform the functions required of it, by the description of the patent.

Cross-q. 29. The swinging motion of the clamp is useful solely to enable it to hold boards of different thicknesses between the clamps themselves at the same time, is it not?

A. It is.

Cross-q. 30. The swinging motion, then, does not give them any lateral elastic movement independent of the roller-beds?

A. I have already explained my views on that subject fully.

Cross-q. 31. I wish to know distinctly whether it is the springs behind the clamps or the swinging motion of the clamps that makes them independently elastic of the beds?

A. I have already said that the clamps may be so mounted without an axis and with springs alone that they will be independently elastic of the beds; that they may be mounted upon an axis alone, and without springs, and then will have no elasticity with reference to the beds; and further, that in order to have the independent elasticity described in the patent, to control two boards of different thicknesses between them at the same time, especially at the ends thereof, they must be mounted upon the beds, both by means of an axis and springs.

Cross-q. 32. Now please state whether, in the construction described in the patent of feed-rollers, permanently fixed in the beds, the rendering the clamps independently elastic of the beds, does not also render them independently elastic of the feed-rollers.

A. When what I have hitherto called the preferred construc-
111 tion is used, the clamps will be independently elastic of the feed-rollers.

Cross-q. 33. Why do you call the construction of feed-rollers in beds only a preferred construction, while you call the swinging motion of the clamp an essential construction?

A. For two reasons. One is, that I find in the patent description of rollers in the beds which are not feed-rollers, as I have already stated at length; whereas, I find in the patent no description of clamps, except such as have a swinging motion.

Second. All the functions set forth both in the second nature of invention and the second claim as resulting from the combinations therein named will be performed, whether the rollers in the clamps be or be not feed-rollers, and those same functions set forth in the same places cannot be performed by the machine unless it has clamps which will swing as upon an axis.

Cross-q. 34. Do you consider it essential to obtaining a lateral elastic movement of the clamps independent of the roller-bed, that the clamps should be attached to the roller-beds, or may they be upon a separate standard?

A. I can conceive of a construction in which the clamps could be mounted upon a separate standard so as to perform all the duties of those described in the patent, and to be equivalents of them in the combinations in which they are claimed.

Cross-q. 35. Now please look at the model marked "Complainant's exhibit No. 5," (Kenyon & Dunbar,) and state whether or not one at least of the clamps shown in that machine has not, by reason of rubber springs behind the standard to which it is attached, a lateral elastic movement entirely independent of the roller-bed, formed by the pair of rollers farthest from the saw?

A. The clamp in that machine is attached to a roller-bed permanently, and has no elasticity independent of that roller-bed. The ma-
112 chine, unlike the plaintiffs', and like some of the old machines, has two adjustable beds, which have an elasticity independent of each other, and can therefore control both thick and thin boards at the same time. In consequence of this old feature of construction, the clamp which is permanently fixed to one roller-bed has an elasticity independent of the other roller-bed, farthest from the saw.

Cross-q. 36. Now please look at the model marked "Exhibit No. 5," in Frame case, and state whether or not one at least of the clamps shown in that machine has not, by reason of the springs behind it, a lateral elastic movement entirely independent of the roller-bed formed by the frame and feeding-rollers.

A. I do not understand the latter part of the question, or how the bed is formed of rollers; and I have already stated that I believe that that exhibit has but one clamp. That one clamp has a lateral and swinging elastic motion, independent of the elastic bed and of the rollers which it contains. Whether they are feed-rollers or not I cannot tell. Judging from the model they are not feed-rollers.

Cross-q. 37. Will you please look at the patent, defendants' exhibit No. 3, and state what portions of the machine represented and described in said patent constitute the roller-beds?

A. In the machine represented in the drawing and specially described, the sliding-table C, with uprights attached to it, which support the cross-piece F, is the adjustable bed which supports the fence-rollers E

E. The elastic bed consists of the cross-pieces K K and the upright L, which constitutes the frame that supports the rollers I I.

Cross-q. 38. Now please look at that patent and state if you find any device for clamping the stuff having a lateral elasticity independent of the parts you have mentioned.

A. I do not.

Cross-q. 39. Now please look at that patent of Pearson Crosby, (Exhibit No. 4,) and state whether you find therein described any device for clamping the stuff after it has passed the feed-rollers or roller-beds, independent of the elasticity of the feeding-rollers or the bed which holds the feeding-rollers?

113 A. In this machine, as specially described and shown in the drawing, all the parts which control and direct the board act as in the defendants' machine, (complainant's exhibit No. 5,) except that in that machine both pairs of rollers are feed-rollers, whereas in the machine specially described in the drawing of Exhibit No. 4 the only feed-rollers are those nearest the saw. The machine of Exhibit No. 4 has a device which will clamp stuff after it has passed the adjustable roller-bed furthest from the saw, and also has *has* a device which will clamp the stuff, *or* after it has passed the feed-rollers, provided there is not then a thicker piece between the feed-rollers. As I have before stated, the clamp is so mounted that it has no elasticity independent of the roller, to the bed of which it is attached, which is one of the feeding-rollers of that machine.

Cross-q. 40. In answer to the first cross-question you stated that, in the Myers & Eunson machine, if a single deflecting-plate only was used, the tendency would be to increase the friction upon the side of the saw opposite to that on which the deflecting-plate was used. In case the piece of the line side was thin, would not the amount of increase of friction upon the side of the saw opposite to the deflecting-plate depend upon the strength of the piece deflected?

A. Not entirely.

Cross q. 41. In sawing two pieces of stuff of equal thickness at different times, will not the friction be increased in proportion to the thickness of the piece cut off and deflected?

A. In some proportion or other.

Cross-q. 42. Please look at the model, Exhibit No. 6, in Frame case, and supposing the saw to be a solid-plate saw, with collars about one-third the diameter of the saw, with stiff deflectors of iron 2½ to 3 inches high placed back of the shafts as represented in that model. Do you consider such a machine to embody substantially the same combinations described in the first claim of the Myers & Eunson patent, as expressed in the disclaimer?

114 A. I do not feel competent to give an opinion as to the effect to that disclaimer on the patent, especially as I have not read it up to this time.

Cross-q. 43. Please look at said model under the suppositions contained in the last question, and state whether or not the combination of the two deflectors with the saw in that model is substantially the same combination as that of the two deflecting-plates with the saw in the Myer & Eunson machine.

(Objected to as not relating to the subject-matter of the direct examination.)

A. I think it is.

Cross-q. 44. Please look at Pearson Crosby's patent, Exhibit No. 4, and observing that the rollers on the line side are provided with mechan-

ism for adjusting them, so that the saw will cut a bevel on the stuff, please state, how the elastic roller-bed is to be adjusted, so as to hold the stuff in that position.

A. The statement in the question is erroneous; the patent does not say that those rollers can be adjusted so that the saw will cut a bevel on the stuff, on the contrary the statement is, that they are adjustable so as to "adapt the machine to the sawing of plank thicker at one edge than the other." If a plank, thicker at one edge than the other, is put in the machine to be resawn or slit, the operation can be effected by inclining the rollers which are mounted in the adjustable beds in the manner shown in the patent, while the rollers which are attached to the elastic bed are perpendicular. The elastic roller-bed needs no adjustment in order to perform the operation of sawing a plank, thicker at one edge than the other.

Cross-q. 45. You have stated that you have seen vertical saws, in which stuff is fed by an endless chain, between roller-beds, containing pressure rollers only. When and where did you see such feeding and guiding device, connected with upright or other saws.

115 A. I do not remember having stated that I have seen such machines. I do think, however, that I have seen them, although I cannot tell positively where. At the time, a good many years ago, when there was a litigation under the first Pearson Crosby patent against Hawley and others. I am not positive on this point. Such a machine is described in the second Pearson Crosby exhibit, No. 4.

Cross-q. 46. How many machines did you ever see in which the feed was performed by an endless chain between pressure rollers?

A. As I have already distinctly stated that I am not positive whether I have ever seen an actual machine containing those features, I am not able to answer that question.

Cross-q. 47. Do you know where any such combination of feeding-device and roller-bed is described or shown except in the suggestion contained in the Pearson Crosby's patent of 1851, Exhibit No. 4.

A. I do not now remember of any other place.

Cross-q. 48. Have you not, for many years, been very familiar with machines for resawing or slitting lumber, and have you not seen a considerable number of said machines, or described in descriptions of said machines adjustable and elastic beds, containing feeding-rollers?

A. I was very familiar with such machines at about the time of the litigation above spoken of. I have never examined them carefully since, although I may have seen them in manufactories, until I examined some time ago the machine at John Dunbar's, which had adjustable and elastic beds containing feed-rollers. Prior to that time I had seen one machine, at least, which had no feed-rollers upon the elastic bed; and, I think, other machines in which some of the rollers in each bed were feed-rollers and some were not.

HENRY B. RENWICK.

Subscribed and sworn to this 8th day of March, 1871.

ALBERT K. POST,
Examiner, &c.

116 NEW YORK, *March 9th*, 1871—3 p. m.

Present, counsel for both parties.

ERASTUS W. ROFF, as witness called on behalf of the defendants, and being duly sworn, deposes and says as follows:

Q. 1. What is your name, age, residence, and occupation?

A. Erastus W. Roff; my age is forty-eight years; reside at Newark, N. J., and am a machinist.

Q. 2. Are you practically acquainted with resawing-machines and their mode of operation, and especially with the resawing-machines constructed like the model, complainant's exhibit No. 5, Kenyon & Dunbar; and, if so, how long have you been so acquainted?

A. I am perfectly acquainted with the saw so constructed. I have been acquainted with this saw for the last seven or eight years. I am one of the joint owners in it.

Q. 3. Have you witnessed experiments with such a saw at the box-factory of John Dunbar & Co., during the last three days? If you have, please describe them, and state the results which you witnessed.

A. I was requested to call at Mr. Dunbar's factory and see the experiments there made. I did so the day before yesterday; that was the 7th of March. I saw the saw being used: first, with the deflecting plate taken off of the left side of the saw, opposite the guide side; the feed-rolls were adjusted and lumber sawed, without the deflecting plate. It appeared to saw equally as well and as fast as before with both deflecting plates on. I should judge there was from two to three thousand feet sawed by that process. The deflecting plate was again put on that side, and the one on the opposite side was taken off; the feed-rolls were re-adjusted and lumber sawed by that process. I watched it for about two hours and a half. I saw no difficulty in sawing. It sawed about the same as usual, equally as fast and as good. The flange did not become heated to affect the sawing in any way. I put my hand on the flange several times and found it a little warm, but not
117 enough for it to burn my fingers. It sawed boards varying in width from six to twenty inches wide. The widest was about as wide as the saw could cut them through, i. e., twenty inches was all the saw could cut.

Q. 4. How long did you watch the sawing with the single deflector?

A. In the morning I was there, I should judge, two hours; I did not note the time particularly in the morning. In the afternoon, two hours and a half, from 12.30 to 3 p. m.

Q. 5. Did you see the machine operate with the rollers nearest the saw, only, operating as feed-rollers; and, if yea, with what results, and how long did you witness it?

A. I did see it operated in this manner, and should think I saw it operated for about an hour, as near as I can judge. I didn't take the time. It seemed to work nearly or quite as well as it had before.

Q. 6. Did you observe any difference in the speed with which the boards were sawn when the two rollers nearest the saw, only, were used as feed-rollers?

A. No, sir; there was no difference that I could see. We used the fastest feed, without any difficulty at all or any delay.

Q. 7. Did you see said machine run when the two rollers nearest the saw and the back roller on the line side were used as feed-rollers; and, if yea, with what result?

A. I did. I could see no difference in the feeding of it. It fed equally as well, with the exception of a thicker board being presented to the roll, furthest from the saw, when the sawed board had passed beyond the rolls furthest from the saw, then we were compelled to saw off the pressure-roll, which was ungeared, furthest from the saw, or jam the board in between the rolls, in order that the two rolls next the saw could propel or feed it to the saw.

Q. 8. Will you please look at the boards, defendants' exhibits Nos.

11 and 12, and state if you saw them sawed, and under what adjustment of the machine?

118 A. This Exhibit No. 11 when sawed was one board and was afterwards cut into three lengths and six pieces. It was sawed with the two rolls furthest from the saw displaced, (not acting as feed-rollers.) Exhibit No. 12 was also one board when sawed, and is now cut into three lengths and six pieces. It was sawed with the three feed-rollers, the two nearest the saw and the one on the line side, furthest from the saw, with the fourth roll used as a pressure roll.

Q. 9. State whether these two boards were sawed with one or two deflectors.

A. They were both sawed with only one deflecting plate on the saw. It is my impression that when Exhibit No. 12 was sawed the deflector was on the line side; but that I am not positive about, as I don't know that I can precisely identify the two boards in that respect; but I know that one was sawed with the deflector on one side and the other with the deflector on the other side of the saw.

Q. 10. A suit is now pending against you on the Myers & Eunson patent, in the district of New Jersey, is it not?

A. Yes, sir.

And, being cross-examined by Frederick H. Betts, esq., deposes and says as follows:

Cross 11. How long have you been engaged in the manufacture of machines similar to the model, complainant's exhibit No. 5, Kenyon & Dunbar?

A. I guess twelve years, in the manufacture of machines similar to that, but not exactly like it; that is, they didn't have the deflecting *plating* plates nor clamps on. They had all the feed-roller arrangements.

Cross 12. How long have you been engaged in the manufacture of machines like the model, with deflecting plates and clamps, represented in the model, complainants' exhibit No. 5, Kenyon & Dunbar?

A. As near as my recollections serves me, between five and six years. It may exceed that time. I can't give any definite data.

119 Cross 13. You testified, in the suit against you in New Jersey, did you not, that, during that time, you had made some twelve or fourteen of said machines?

A. That is my impression.

Cross 14. The owners of the Myers & Eunson patent in New Jersey have sued you for making those machines, have they not?

A. Yes, sir; that is, Mr. Lagowitz.

Cross 15. How many of said machines have you ever made with one deflecting-plate on them?

A. Not any, sir.

Cross 16. How ma'y of said machines have you ever made with less than four feeding-rollers?

A. Never made any. We have made a smaller saw (made very similar but not exactly like this) with two feed-rolls. There is a single blade to that machine, and it is without deflecting plates or clamps.

Cross 17. How many of said machines have you ever made in which the standards holding the rollers, on the side opposite to the line side, were not independently elastic of each other?

A. Never made any that I know of. They have got to be elastic to compensate for the different thicknesses of lumber.

Cross 18. Is it your opinion, from the experiments made by you the day before yesterday at Mr. Dunbar's, that the saw will work equally

well if the two rollers farthest from the saw only are used as feed-rollers and the others merely as pressure-rollers?

A. From my experience over there, I think it would. We used those nearest the saw as feed-rollers and those farthest from the saw merely as pressure-rollers.

Cross 19. Then you do not regard the use of both pairs of rolls as of utility merely in feeding the stuff?

A. I do not think them absolutely necessary. I think that the one pair of rolls will feed sufficiently, from the experiments tried at Dunbar's.

Cross 20. In answer to question 3, you have stated that after
120 having adjusted the feed-rolls and used the machine with the deflecting-plate taken off of the plane or flat side of the saw, you re-adjusted the feed-rolls and used the machine with the deflecting plate taken off of the plange of side only, did you not?

A. I would first say that we took the deflecting-plate off of the straight side of the saw, then used it for about two hours. Then we put the deflecting-plate back on the straight side of the saw, and took it off the opposite side and then used the saw.

Cross 21. Why did you re-adjust the feed-rolls after the first experiment and before the second?

A. To compensate for the strain or 'pread of the lumber being sawed.

Cross 22. In other words, in order to saw with one deflector off, you threw the line of the rolls sufficiently out of the line of the saw to compensate for the increased strain, did you not?

A. Yes, sir; it was to make the saw run straight; to prevent it running crooked in the board.

Cross 23. Do you think that there is no use in having more than one deflecting-plate?

A. I don't think there is any use of but one. I think they can saw the same amount with but one deflecting-plate as with two, from the experiments made on March 7th.

ERASTUS N. ROFF.

Subscribed and sworn to this 9th day of March, 1871.

ALBERT K. POST, *Examiner, &c.*

ANDREW PHILLIPS, a witness called on behalf of the defendants, and, being duly sworn, in answer to interrogatories proposed by Chs. F. Blake, esq., deposes and says as follows, to wit:

Q. 1. What is your name, age, residence, and occupation?

121 A. Andrew Phillips. I am 39 years old; reside in New York City, and am a sawyer.

Q. 2. Are you in the employ of John Dunbar and Company, and how long have you been there?

A. I am. I have been to work for John Dunbar some six or seven years, or thereabouts.

Q. 3. Are you now running a resawing-machine substantially like complainants' exhibit No. 5, Kenyon and Dunbar; and, if so, how long have you been running it?

A. I am running one substantially like it, and have been running it some six or seven years; about the same time that I have been to work for Dunbar.

Q. 4. In the machine of Dunbar's are the rollers on the line side of the saw on separate standards.

A. They are.

Q. 5. Have you lately run that machine so adjusted that only the rollers nearest the saw acted as feed-rollers?

A. I have, on the day before yesterday, March 7, 1871.

Q. 6. With what results?

A. The saw appeared to do its work the same as with the four-roller feed. I could see no difference.

Q. 7. How long did you thus run it?

A. Half a day on the 7th and half a day on the 8th.

Q. 8. Did you observe any difference in the speed when you ran it with these two rollers only?

A. I could perceive none.

Q. 9. How many feet an hour did you cut with your saw running this way?

A. I time my saw to cut two double-truck loads. There are 3,200 feet of sawing in two double-truck loads. The saw performed this work in one hour and a half; not over that, *saw*, but under if anything. That is about the usual run of my , about as fast as it will feed.

Q. 10. When you thus ran the saw, did you saw the usual lumber you are accustomed to saw?

A. I did.

Q. 11. Did you observe any difference in the quality of the work when you thus ran the saw?

A. I found no difference. When my work was done it was good.

122 Q. 12. Did you run the saw with the rollers nearest the saw, and the roller furthest from it on the line side acting as feed-rollers, and with what result?

A. I did; but I ran the roller furthest from the saw on the line side more as a guide than a feed. I found no difference; the saw worked good.

Q. 13. Did you run the saw with a deflecting-plate on one side only; and, if yea, how long, and with what results?

A. I ran it with the deflecting-plate off the straight side, for about a half a day; and it worked good.

Q. 14. Did you observe any difference in the results, between one reflector and two?

A. I think if the saw is kept in proper order, there is no difference.

Q. 15. Did you try it with the deflector taken off of the other side; and, if yea, with what results?

A. I did; with the deflecting plate left on the straight instead of on the flange side; and the saw worked good.

Q. 16. Did it make any difference in the amount of work you could do whether there were one or two deflectors on the saw?

A. I could find none. I did all my work that was required; I could do no more. I could do it as fast with one as with two.

Q. 17. What do you mean when you say, "if the saw is kept in proper order, there is no difference?"

A. I mean if the saw is kept round, and set to suit the side from which the deflecting-plate is off.

Q. 18. How do you set it to suit the side from which the deflecting-plate is off?

A. I give that side the lead and set my rollers to suit that side. What I mean by lead is, that I set alternate teeth of the saw a little further out towards that side.

Q. 19. Every saw has its own peculiar set and adjustment, with which it will work best, has it not?

A. Well, I don't think it has. I should say that if you take three sawyers, neither one of them will file and set a saw alike.

123 Q. 20. How often, running the saw all day, do you usually stop to file and set it.

A. If you strike no nails or stones, and run the machine all day, I should say four times; twice in the forenoon, twice in the afternoon.

Q. 21. How long does it take to file and set it?

A. Different times. The usual time, if you strike nothing, is, say, one hour.

P. 22. When you ran the saw, with one deflector only, did the saw or flange become so heated as to produce any practical inconvenience in sawing?

A. No; not any.

Q. 23. Look at defendants' exhibits 11 and 12, and state how they were sawed?

A. Defendants' exhibit 12 I cut with two feed-rollers, a guide, and pressure; Exhibit No. 11, with the two rollers nearest the saw acting as feed-rollers, and the other two rollers doing nothing, rolled away. I cannot tell which board I cut with the deflecting-plate off of the straight side of the saw, or which was cut with the deflecting-plate off the flange side; but the both boards were cut with but one deflecting-plate on the saw, and one was cut with one on one side, and one with one on the other.

Defendants' counsel give notice that they will repeat the experiments testified to by the last two witnesses in the presence of the court, if desired.

The cross-examination of this witness is adjourned to March 10th, 1871, at 12.30 p. m.

NEW YORK, *March 10th*, 1871—12.30 p. m.

Present, counsel for both parties; and the further examination of the witness, Andrew Phillips, is, by consent, adjourned to March 11th, 1871, at 1 p. m.

124 NEW YORK, *March 11th*, 1871—1 p. m.

Present, counsel as before; and the witness, Andrew Phillips, being further examined by Chas. F. Blake, esq., deposes and says as follows, to wit:

Q. 24. Since you last testified, have you been running your saw with one deflecting-plate; and, if yea, on which side of the saw?

A. I have; on the straight side.

Q. 25. State whether in quantity or quality the work done with this single deflector has differed from the work you have been accustomed to do with two deflectors?

A. It has not.

And being cross-examined by Frederick H. Betts, esq., deposes and says as follows:

Cross-q. 26. Before the 7th day of March, 1871, when the experiments were tried with your saw, in the presence of Mr. Roff, had you ever run the saw with a single deflector?

A. I had.

Cross-q. 27. When, and for how long a time, at any one time?

A. Well, I can't give the exact date or time; but I think it was last winter that I ran the saw pretty near all the time with one deflector off; at any rate it was three or four days of the week.

Cross-q. 28. Why did you do this?

A. So as not to break the lumber I was sawing.

Cross-q. 29. What kind of lumber was it that was liable to break with both deflectors on?

A. White wood; the reason is, I consider it more brittle than pine. Pine will break, too, if it is too thick. This white wood was heavy lumber, from two to three inches thick.

Cross-q. 30. After having cut this heavy white wood, you put both the deflectors on again, when you came to cut pine, did you not?

125 A. I did.

Cross-q. 31. After the experiments of March 7, 1871, in sawing your lumber next day, you put both deflectors on again, did you not?

A. I had them on in the forenoon.

Cross q. 32. On the 10th day of March, when the counsel for the complainants came to see your machine run, in accordance with the offer of defendants' counsel, you had both of the deflectors on, did you not, and took one off to repeat the experiments of the 7th of March?

A. I did.

Cross-q. 33. Did you put both deflectors on again that day?

A. I did not.

Cross-q. 34. Have you had both deflectors on since?

A. I have not.

Cross-q. 35. After exhibiting the running of the machine with one deflector on only to the complainants' counsel, did you afterwards on the same day run the machine in that condition in the presence of Mr. Treadwell, complainants' expert, who is here present?

A. I was running the machine when this gentleman happened to drop in.

Cross-q. 36. You ran it in his presence, did you not, with the deflector on the straight side only?

A. I did.

Cross-q. 37. In sawing with one deflector, you so adjust the feed that the board will be fed at a slight angle to the saw, so as to throw the bulk of the friction upon that side of the saw upon which the deflector is placed, do you not?

A. I throw my back roller so as to fetch the board off the flange as much as possible, and carry a little more set on the flange side.

Cross-q. 38. That is, when you use the deflector on the straight side, as you did in the experiments before the complainants' counsel and before Mr. Treadwell, is it not?

126 A. Yes, sir; when you came there in the morning my saw was filed up and sharp; and the saw worked quite a while, and I kept on running, and by making a different alteration of the rollers, I did not have them lined up properly, as I think I informed you.

Cross-q. 39. Now, in sawing with the deflector on the flange side only, you set your roller furthest from the saw, so as to take the friction off the side that has no deflector, and give the saw-teeth a set on that side, do you not?

A. I set one of the rollers furthest from the saw sideways a little, so as to lessen the friction on the side that has no deflector, (though there ain't much friction any way,) and I give a little set to the saw-teeth on that side. The reason I do this is to keep the saw-cut in the plank from going sideways.

Cross-q. 40. The clamps in the Dunbar machine are made of wrought iron, are they not, and not of brass, as represented in the model?

A. They are made of cast iron and don't stand much pressure.

Cross-q. 41. When you ran the machines, in the presence of Mr. Treadwell, he asked you, did he not, if you would run the machine with the rollers nearest the saw only, having the feeding motion, and both of

those furthest from the saw disconnected from the power, but remaining in line, so as to act as pressure-rollers?

A. He did.

Cross-q. 42. What did you tell him?

A. I told him I didn't want to make a jackass of myself to shove the boards through the rollers without a spring or an elastic on the stanchion; and furthermore, I informed this gentleman, now present, that I would ungear the back rollers and let him see the saw work with a pressure-roller. He informed me that neither one of these rollers should be geared, but they should stand separate as pressure-rollers; and he asked me if I would shove the board through to the feed-rollers, and I informed him that it would be main strength and stupidness to feed the boards in that way.

Cross-q. 43. Did not Mr. Treadwell, after having seen you saw a number of boards with one deflector off, call your attention to the irregularity of the cut in the boards?

127 A. He called my attention to an irregularity in the shear of my saw, which was caused by the saw being dull. I stopped and set the saw-teeth on one side, and pointed a little, and then started the saw again, and resawed some five or six boards. I remarked that one board was too wide for my saw, and Mr. Treadwell said no, the saw was plenty wide to cut it. I put my saw on the slow-feed, and ran the board through, and I thought it was well done. I also ran in a board, and informed Mr. Treadwell I would let it go through, and I suppose gauged off about a half-inch board. That was the last board sawed in Mr. Treadwell's presence.

Cross-q. 44. Did you not, when sawing in the presence of Mr. Treadwell, and while the boards were passing through the machine, frequently move the roller-bed sideways across the machine by means of the proper screw?

A. Mr. Treadwell asked me what I was doing working so much on this wheel. I told him that the screw carried the bed east and west across the machine. The wheel is attached to this screw.

Cross-q. . Did you not, when sawing in the presence of Mr. Treadwell, open the standard containing the roller nearest the saw on the elastic side by turning another screw until the board entered on the saw, and then did you not screw it up?

A. In running boards of unequal thickness, (box-lumber is not very even,) when the thick part comes in the clamps I have got to open that roller to let it pass through, for the reason that I have no spring in the clamps.

And being re-examined by Chas. F. Blake, esq., deposes and says as follows:

R. D. 46. When you run boards of unequal thickness, with two deflectors, do you not have to do the same thing?

A. I do with our feed-works.

R. D. 47. When Mr. Treadwell came to your place did he inform you that he was acting in the interest of the complainants in this suit, or did you know it?

128 A. I did not know it when I saw him, but he told me something or other about my having testified about pressing boards through the two back rollers. He never informed me what his business was more than that.

R. D. 48. Did he inform you that he was in the employ of, or in the interest of, the Myers & Eunson people?

A. He did not. I certainly did not know that he was employed by or acting for the Myers & Eunson people.

R. D. 49. Did Mr. Treadwell ask you to run the machine with the rollers nearest the saw, only, having the feeding-motion, while one of the rollers furthest from the saw had its spring-motion?

A. He did not.

R. D. 50. When you told him that it would be "main strength and stupidness" to feed the boards when neither of the rollers farthest from the saw should be geared but should stand separate as pressure-rollers, did you understand him to mean with the spring taken off?

A. I did; and I made a remark that we should need to have a lever, like a Crosby upright saw, to work that way anyway easy. I mean with the elastic off.

R. D. 51. During your examination, has Mr. Treadwell been present suggesting questions to Mr. Betts, counsel for complainants, in regard to what happened at the shop?

A. He has.

And being recross-examined by Frederick H. Betts, esq., deposes and says as follows:

Recross-q. 52. Was Mr. Betts present at the shop when Mr. Treadwell was there, or did he see any of the experiments performed in the presence of Mr. Treadwell, or ask the question that Mr. Treadwell asked?

A. He was not. I ran the saw for Mr. Betts with the two front rollers feeding, and three rollers with the pressure-roller.

ANDREW PHILIPS.

Subscribed and sworn to before me this 11th day of March, 1871.

ALBERT POST,
Examiner, &c.

129 HENRY B. RENWICK, being recalled on behalf of the defendants, deposes and says as follows:

Q. 1. Have you read the caveat of Myers & Eunson filed November 15th, 1852, and do you understand the same?

A. I have, and I do.

Q. 2. Do you find described in it any mechanism like the clamps in the Myers & Eunson patent, or any mechanism by means of which boards of unequal thickness can pass through the machine at the same time? giving your reasons for any opinion that you may express.

A. I have read the caveat several times and examined it carefully. It contains no description of clamps the same as or substantially like those described in the Myers & Eunson patent, and no description of any clamps whatever.

It does describe an adjustable bed and an elastic bed, each containing three rollers. The elastic bed is described as being provided with springs and as moving parallel with the face of the saw. The springs are to be applied to the bed itself and not to the rollers; consequently, it would be impossible, with the machine described in the caveat, to clamp two boards of different thickness at the same time. The caveat states that two of the rollers, in each bed, are feed-roller'; but does not state which rollers are to be the feeding ones. The other roller is to be a pressure-roller; but is not stated whether it is to be the one furthest from the saw, or the one nearest the saw, or the one in the middle.

And being cross-examined by Frederick H. Betts, esq., deposes and says as follows:

Cross-q. 3. You do not find stated in the caveat, do you, whether or not the pressure-rollers are provided with any springs?

A. I do find, as I stated before, that one of the beds is provided with springs, and there is no statement that the pressure-rollers, or
130 either of them, on either side of the saw, are to be provided with springs. There is no statement that they are not to have springs.

HENRY B. RENWICK.

Subscribed and sworn to before me this 11th day of March, 1871.

ALBERT K. POST,
Examiner, &c.

Examination closed on the part of the defendants.

131 *Defendants' exhibit No.* 1.—*A. K. P., ex'r.*

[From Holzappfel's Mechanical Manipulation.]

In the larger applications of the veneer-saw, it is built up of segments or separate plates of steel, screwed to the edge of a metal disk or chuck. Some few of the smallest segment-saws are even less than two feet diameter, and those not exceeding about four feet diameter are generally used in the ordinary saw-benches, with fixed horizontal platforms, the work being there fed by hand, as usual.

But where the segment veneer-saw exceeds about four feet diameter, the horizontal platform or table is rejected, and the guidance of the wood is entirely affected by machinery, called the drag; the arrangement of this construction, which is known both as the veneer-mill and segment-saw, is shown in the perspective figure 804, page 812. The veneer always proceeds from the edge of the saw, through a curvilinear trough, parallel with the back of the saw; but in the figure the veneer is represented as if bent almost at right angles, so as to quit the saw in front; this construction is far less common, but was selected for the present illustration, as it affords a more conspicuous view of the entire process.

In the veneer-saw, furnished with the drag, the axes run in massive brass bearings, which are fixed on brick or stone piers; the edges of the lsrger saws dip below the ground into a pit lined with brickwork or masonry.

The axis of the saw is connected or disconnected with the steam-engine at pleasure, by means of a fast and loose pulley; and in bringing the saw to a state of rest, the break-wheel at the end of the axis is strongly grasped by a fraction-hoop, as in some cranes. Between the driving-pulleys and the cone for the saw is placed a bevelled pulley, for a cat-gut band or rope that is used in feeding the cut, as will
132 be hereafter explained. The saw, which is the all-important part of the machine, is made of great strength, and consists of three parts, shown in the section of the edge, Figure 802, of which the shaded part, *c* to *c*, is of cast iron, the white part, *s* to *s*, of soft steel, and the black, *h* to *h*, of hardened steel.

The saw is composed, first, of a cast-iron wheel or chuck, with from six to eighteen arms, which are taper, so as to constitute a cone, the thickness of which, at the center, is about one-twelfth the diameter. The rim of the *cc* is flat and turned smooth on the face to receive a series of six to eighteen segments of soft steel, about one-quarter of an inch thick, marked *ss*, which are fixed to the cast iron by strong rivets; the segments project from five to eight inches beyond the cast iron, and are chamfered at the edge. To the soft steel segments *ss* are affixed a sec-

ond series, *hh*, consisting of about twice the number; these are hardened and serrated, so as to constitute the cutting edge of the saw.

The tempered plates are technically called the hard, and are attached to the soft segments by numerous counter-sunk copper screws, tapped into *ss*. When new, the hard segments project from four to six inches beyond the soft, so that the angle then formed by the three parts *h* to *c*, considered collectively, is only about four to six degrees with the flat face of the saw, and the veneer will readily yield to more than that extent from the log without splitting. To prevent the risk of accident from the exposed spokes of the wheel or chuck, and also the current of wind caused by their rapid rotation, the spaces intervening between them are filled up on the face with wood, and an entire cone of thin boards is attached to the back of the chuck.

The log to be sawn sometimes requires to be previously adzed all over, to remove the sand and dirt that would soon blunt the saw; it is then partially levelled with the adze or plane, to adapt it to the vertical face of the drag. The drag has three long bars of wood, in order that the revolving saw may cut or prepare for itself the surface against which the log is fixed. The sharp ends of the iron dogs are driven a little way into the log, and the dogs are then drawn down by screw-bolts, as represented.

133 Sometimes the log is only temporarily held by the iron fastenings, or dogs, whilst its surface is partially levelled with the saw, after which it is glued on a wooden frame that is full of transverse and oblique bars, and has been also levelled with the saw; the log and frame are afterwards bolted to the drag. In this case the entire body of the wood can be cut into veneer without interruption from the fastenings, and the glue-joints are safe so long as the log does not project more than the width of the glued surface.

The timber requires two motions to be impressed upon it; the one motion, longitudinal, to carry it across the face of the saw; the other motion, lateral, to advance it sideways between each cut, the exact thickness of the intended veneer.

For the first, or cutting-motion, a long railway extends across the face of the saw, and supports the drag, which is carried past the saw by means of a rack and pinion, actuated by a cord proceeding from one of the grooves of the cone-pulley on the mandrel, down to the pinion-axis which is beneath the surface of the ground, and not represented. On the pinion-axis there is a double train of toothed wheels, and a clutch-box, by the three positions of which latter the drag is left at rest, or is carried slowly past the saw in the act of cutting, or quickly back, preparatory to the succeeding cut. The gearing lever, by which the three positions of the clutch-box are given, is perpendicular, and passes downwards through a trap-door, situated close behind the little stool on which the attendant is seated.

The second motion of the log, or its lateral adjustment, is thus affected: The slide that runs on the railway has a horizontal plate, which carries three or more triangular standards, like buttresses, to the perpendicular faces of which are fixed the three wooden bars against which the wood is clamped.

The horizontal plate that carries the triangles is united at each end to the lower piece of the drag by a chamfer-slide with an adjusting screw and nut, one of each alone being seen. The adjusting-screws have

134 worm-wheels at the one end, and are simultaneously moved, by means of a winch-handle, *w*, at the extremity of a long rod, having two worms taking into the two worm-wheels fixed on the adjusting-

screws. From 50 to 60 turns of the handle are required to advance the log of wood one inch; the attendant can, therefore, determine with great facility, the number of veneers cut out of each inch of wood, or he can cut the veneers to any particular pattern for thickness.

There is no impediment to the passage of the log across the rectilinear face of the saw; but for the guidance of the veneer around the back of the cone, some particular arrangements are required. To enable the veneer to avoid the edge of the soft steel segments, to which the serrated blades are fixed, a feather-edged guide-plate, usually of brass, and extending round about one-sixth or eighth of the circle, is fixed almost in contact with the blade, by screw bolts and nuts, which, as seen in Figure 804, unite it to the stationary framing of the machine. The guide is represented black in the sectional view, Figure 803. As the veneer is sawn off, the attendant leads the veneer on to the guide by means of a spud or a thin, blunt chisel; the veneer then slides over the guide, as shown, and proceeds through a curvilinear wooden trough, usually extending round the back of the cone, and the veneer is pulled out on the other side by an assistant and stacked on the heap. Sometimes the veneer is bent nearly at right angles, and quits the saw in front, as in the figure. This arrangement is less usual, but was selected for the illustration, as it offers a more comprehensive view of the several parts.

Before running back the drag, preparatory to a new cut, the handle *w* is unwound two or three turns to remove the log beyond the reach of the saw, and prevent its being scratched by the saw-teeth; these turns are afterwards moved, in addition to those required for the new thickness. The handle is managed by a boy who stands outside the railway.

Whilst the saw is in the act of cutting the principal attendant
135 applies a soft deal freezing-stick on the right and left of the blade, beneath the timber, in order to clear the saw-dust out of the teeth. The speed at which the table is fed is easily adjusted by the selection of an appropriate groove of the cone-pulley on the main shaft, which communicates with the driving-pinion beneath the floor; and this adjustment of the feed is jointly dependent on the condition of the saw as to sharpness and the general quality, hardness, and size of the wood.

The veneer-saw may be used for logs of wood measuring as much as 24 feet in length and 5½ feet in breadth, but which sizes are rarely or never met with in the same log. It may be added, that the number of veneers cut out of each solid inch of wood varies with the width and intended purpose of the veneers; but that, on the average, when the width of the wood is 6, 12, 18, 24, 30, 36, 48, 60 inches, each inch of wood is cut into 15, 14, 13, 12, 11, 10, 9, 8 veneers; and, as about one-third of the wood is wasted in saw-dust, the respective veneers are about two-thirds the 15th, 14th, &c., of an inch in thickness.

The veneer-saw is also applied to cutting cedar wood for making lead-pencils; bead-stuff, or thin wood for making the beadings in cabinet-work; quarter-stuff, or wood quarter-inch thick; and occasionally also to wood nearly half inch thick; and this may be considered the point of meeting between the veneer-saw and the upright-frame saw, page 742, in which ten or a dozen saw-blades are occasionally used for deals. But the veneer-saw works with greater accuracy, and is almost always used for such thin boards of mahogany as are cut by hand at the saw-pit.

For sawing thin boards the segments should be nearly new or very wide, in order that the angle made by the removed board may be slight. But as the board, in riding over the guard (page 810) near the edge of

the saw, is nevertheless somewhat strained open, it becomes needful to apply a contrivance called a guard, to prevent the thin board from being all split off, instead of being entirely separated by the saw. This is accomplished by a curvilinear arm, equal in size and form to the
136 feather-edged guide which lies against the hardened saw-plates; but the guard is very much thicker and stronger, and is covered with a thin plate of brass.

It will be further perceived in the perspective figure, page 812, that the guard is attached to a column, and is represented turned back, or out of work, which is the case while veneers are being cut; but in sawing boards the guard is placed parallel with the edge of the saw, just external to its teeth, (as dotted,) and is adjusted by set-screws to rest in hard contact with the face of the wood which is sliding past it; the removed board is, consequently, held securely into within half an inch of the saw-teeth, or the line of separation, as shown by the diagram, figure 803.

In sharpening the veneer-saw, the workman first applies a lump of grindstone very cautiously, upon a proper support, against the edge of the teeth, as the saw revolves, so as to reduce the few points extending beyond the circle. The saw having been stopped, he then stands on a stage and rests his left arm, which is guarded by a wooden board, or leather shield, upon the teeth of the saw, whilst he manages the triangular saw-file with both hands. The saw-teeth are afterwards set by a hammer and a small, flat stake, held in the left hand. The necessity for the recurrence to sharpening and setting depends much on the hardness of the wood, but is commonly needed several times each day that the saw is in constant work.

When the edge becomes too thick and wasteful, it is ground by means of revolving laps of lead or iron, fed with emery, one lap on the face, another on the back of the saw; the laps are placed one below the other, to prevent their faces touching, and are kept in rapid motion whilst the saw traverses between them, as in cutting, so that all parts of the circumference of this most stupendous and accurate of saws may be ground alike.

137 *Defendant's exhibit No. 2.—A. K. P., ex'r.*

The United States Patent-Office, to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a copy, from the bound volumes of the library of this office, of the English letters-patent granted A. E. L. Bellford, dated May 2nd, 1853, No. 1065, for "improvement in sawing-machines."

In testimony whereof I, Samuel A. Duncan, Commissioner of Patents, have caused the seal of the Patent-Office to be hereunto affixed this eleventh day of March, in the year of our Lord one thousand eight hundred and seventy-one, and of the Independence of the United States the ninety-fifth.

M. D. LEGGETT,
Commissioner.

Specification in pursuance of the condition of the letters-patent, filed by the said Auguste Edouard Loradoux Bellford, in the Great Seal Patent-Office, on the 2nd November, 1853.

To all to whom these presents shall come:

I, August Edouard Loradoux Bellford, of 16 Castle street, Holborn, (City,) London, patent-agent, send greeting:

138 Whereas her most excellent majesty Queen Victoria, by her

letters-patent, bearing date the second day of May, in the year of our Lord one thousand eight hundred and fifty-three, in the sixteenth year of her reign, did for herself, her heirs and successors, give and grant unto me, the said Auguste Edouard Loradoux Bellford, her special license, that I, the said Auguste Edouard Loradoux Bellford, my executors, administrators and assigns, or such others as I, the said Auguste Edouard Loradoux Bellford, my executors, administrators and assigns, should at any time agree with, and no others, from time to time, and at all times thereafter during the term therein expressed, should and lawfully might make, use, exercise and vend within the United Kingdom of Great Britain and Ireland, the Channel Islands, and the Isle of Man, an invention, communicated to me by a foreigner residing abroad, for "improvements in sawing-machines for slitting or resawing plank and other timber by means of circular saws," upon the condition (amongst others) that I, the said Auguste Edouard Loradoux Bellford, for an instrument in writing, under my hand and seal, should particularly describe and ascertain the nature of the said invention, and in what manner the same was to be performed, and cause the same to be filed in the Great Seal Patent-Office, within six calendar months next and immediately after the date of the said letters-patent.

Now, know ye, that I, the said August Edouard Loradoux Bellford, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement: that is to say—

This invention relates to the circular saw, which presents, in some respects, important advantage over the reciprocating saw, but yet has not to my knowledge been heretofore successfully applied to resawing or slitting planks and other timber, except very narrow timber, for the reason that when such saw is made of the requisite diameter for wide timber, it will buckle, unless made so thick as to be wasteful of the timber and
139 of the power applied to drive it. This difficulty has been overcome for the purpose of sawing veneers by making the saw of a converse form on that face of it over which the veneer passes as it is cut from the log, but this method cannot be used for what is called resawing or slitting planks or timber for the reason that from the thickness of the two parts they are too stiff and rigid to pass over the thick part of the saw, when the additional thickness is made all on one, and even if it were made equally on both faces, the binding on *on* the saw-plate would be so great as to present a serious resistance to its rotation. The object of the invention is so to construct and apply the circular saw to the slitting or resawing of planks or other timber as to avoid all the objections above pointed out in supplying a circular saw with both faces converse or swelled so that it shall present a thin edge where the teeth are cut to avoid waste of the timber and reduce the resistance in cutting, and be gradually thicker towards the shaft, to give it the requisite thickness to prevent buckling, and ensure a steady motion at the periphery; when this is combined with a fixed beveled gauge placed near the periphery of the saw on that side of the shaft opposite to where the planks are presented to the teeth so that the said gauge shall separate or spread the two parts of the planks as they are being cut, and prevent them from binding against the two faces of the saw.

In the accompanying drawing, Fig. 1 is a plan of a sawing-machine constructed according to my improvements.

Fig. 2 is a saw elevation of the same.

Fig. 3 is a transverse vertical section of the same through the axis of

the saw looking in the opposite direction to that in which the plank is fed towards the saw.

Fig. 4 is a transverse vertical section taken in the same plane as Fig. 3; but looking in the same direction as the plank moves.

Fig. 5 is a horizontal section of the beveled gauge, and

Fig. 6 is a section through the axis of the saw, of the same form as, but differently constructed to, that shown in other figures.

140 Similar letters of reference indicate corresponding parts in the several figures.

"A" represents a circular saw mounted upon an appropriate shaft, B, which runs in bearings in the usual manner, in a frame, C, of the proper form.

The shaft is provided with a pully, D, as usual, to receive a belt from any first move.

This saw is made converse on both sides so as to be of considerable thickness towards the shaft, and thin at and near the periphery. The extra thickness or convexity may be produced in a solid plate, as shown in Figs. 3 and 4, or by securing a plano-convex plate on each side of a saw constructed in the usual way.

Behind the saw, and firmly attached to the frame, is the guide or gauge E, which is of metal, in form of the segment of such a circle that when placed near the periphery of the saw it shall be concentric, or nearly so, therewith. The edge of it next the saw is sharp, or nearly so, and it is gradually thicker towards the back for the purpose of so spreading the plank as to prevent binding or rubbing against the edge of the saw.

The plank F is presented to the edge of the saw by two sets of rollers, the one set, F F F ^{1}, constituting the guide or bed rollers. They are mounted in a frame, G, which can slide laterally in the main frame, and be adjusted to determine the thickness of one part of the plank, to be slit by means of a set screw, *g*. One F ^{1} of these rollers has its lower journal connected with vertical shaft J, in the lower part of the frame, by a rod, K, and two universal joints, so that the roller may be changed in position and receive motion from the said shaft J, which shaft has a spin-wheel, L, which engages with another spin-wheel, M, of equal diameter, on another shaft, N, which carries a bevel-wheel, P, engaging with a corresponding bevel-wheel, O, on the shaft of a band-wheel, Q, over which passes a band, R, from a pulley on the end of one of a pair of conical pulleys which receive motion by a band, S, from the shaft of the saw. In this way the feed-motion for the plank is obtained,

141 and the conical pulleys admit of varying the feed in the usual manner. By the side of the rollers first described is the other set, T T T ^{1}, mounted two on one frame, U, and the third in another frame, V, and the two frames are connected by a strong spring, W, with an adjusting screw, X, by means of which the two sets of rollers can be brought nearer together or further apart to suit the thickness of the timber to be slit or resawed, the spring giving the requisite play to the rollers to enable them to adapt themselves to the varying thickness of the plank as it passes through, whilst at the same time its tension should be sufficient to bend out of the plank any warps, and ensure its preservation to the edge of the saw in a proper manner, so that one part of the plank, when it is slit, shall be of equal and uniform thickness.

The roller T ^{1} of this set is connected with the shaft N by means of a rod, Y, and two universal joints, so that one of the rollers of each set taken together act as feed-rollers to propel the plank towards the saw,

although the gearing may be dispensed with, and the plank be fed forward by other known means, such as an endless chain.

When the two geared rollers are used for the purpose of feeding the plank, one or both of them should be fluted.

I claim the employment substantially as and for the purpose specified, of a circular saw with both faces convex, whether the said convexity is produced in a solid plate, or made by securing other plates to the sides of a saw constructed in the usual way, when this is continued with the guide or gauge E, for spreading apart the plank or other timber to prevent the binding of the saw.

In witness whereof I, the said Auguste Edouard Loradoux Bellford, have hereunto set my hand and seal this twenty-sixth day of October, in the year of our Lord one thousand eight hundred and fifty-three.

A. E. L. BELLFORD. [L. S.]

142 *Defendant's exhibit No. 3.—A. K. Post, ex'r.*

The United States Patent-Office, to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters-patent granted Pearson Crosby.

Dated 28th April, 1857, No. 458.

In testimony whereof I, Samuel S. Fisher, Commissioner of Patents, have caused the seal of the Patent-Office to be hereunto affixed this sixteenth day of May, in the year of our Lord one thousand eight hundred and seventy, and of the Independence of the United States the ninety-fourth.

SAMUEL S. FISHER,
Commissioner.

No. 458.

UNITED STATES OF AMERICA.

To all to whom these letters-patent shall come:

Whereas, Pearson Crosby, of New York, N. Y., has alleged that he has invented a new and useful improved saw-mill, for resawing boards and other lumber, (for which letters-patent were issued to him, dated 3d November, 1841, re-issued 10th March, 1849, and extended 30th
143 October, 1855, for the term of seven years from and after the 3rd November, 1855, which letters having been surrendered by him, the same have been cancelled and new letters ordered to issue to him on an amended specification,) which he states has not been known or used before his application, has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said saw-mill, and that the same hath not, to the best of his knowledge and belief, been previously known or used; has paid into the Treasury of the United States the sum of fifteen dollars, and presented a petition to the Commissioner of Patents, signifying a desire of obtaining an exclusive property in the said saw-mill, and praying that a patent may be granted for that purpose.

These are, therefore, to grant, according to law, to the said Pearson Crosby, his heirs, administrators, or assigns, for the term of twenty-one years from the said third day of November, one thousand eight hundred

and forty-one, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said saw-mill, a description whereof is given in the words of the said Crosby, in the schedule hereunto annexed, and is made part of these presents.

In testimony whereof I have caused these letters to be made patent, and the seal of the Patent-Office has been hereunto affixed.

Given under my hand, at the city of Washington, this twenty-eight' day of April, in the year of our Lord one thousand eight hundred and fifty-seven, and of the Independence of the United States of America the eighty-first.

JACOB THOMPSON,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent-Office.

S. T. SHUGERT,
Act'g Commr. of Patents.

144 The schedule referred to in these letters-patent, and making part of the same.

To all whom it may concern:

Be it known that *J*, Pearson Crosby, of Fredonia, in the State of New York, have invented certain new and useful improvements in saw-mills, for resawing boards and other lumber, and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which

Fig. 1 is a perspective view of the machine.

Fig. 2, a vertical section of the apparatus for gauging, controlling, presenting, and feeding the boards; and

Fig. 3, a vertical section of a modification thereof.

The other figures representing some of the details will be referred to hereafter, but in all the figures the same letters indicate like parts.

In resawing lumber, and particularly in resawing thin boards, it is of the utmost importance that the boards be presented and moved to the cutting action in the plane of the saw, for if there be any deviation from this the sawing becomes imperfect, the saw is strained and bent, and the line of cut is liable to be carried out of the required track, so that neither of the boards produced will be of an equal thickness.

It is well known that much of the lumber brought to market, which requires to be resawed, sometimes into very thin boards, is more or less warped or bent in the direction of the length or breadth, or both, and hence a saw-mill, to be practically adapted to this purpose, must be capable of resawing such, as well as straight lumber.

In the well-known veneering saw-mills this can be done, because the piece to be resawed is previously placed along its entire length against the vertical face of a carriage parallel with the plane of the saw, and secured to such face so that it can be firmly held, and prevented from bending, and if desired the warps and bends can be forced
145 out in securing it to the face of the carriage. But this mode of procedure is attended with great labor and consumption of time, and for any other purpose than that of cutting veneers from very costly lumber is, in every respect, too expensive.

Now, the object of my said invention is to resaw boards as they are found in the market by a self-adapting or automatic mechanism, operating in such a manner that one of the boards produced by each resawing will be of a uniform or equal thickness from end to end however the original board may be bent or warped, or vary in thickness from end to

end, and to produce a like result on any number of boards in succession, however they may vary from each other in thickness.

And to this end my said invention consists in combining with the saw of any suitable kind, and operating in any suitable manner, a mechanism for gauging one face of the board to be sawed and guiding it in a plane parallel with the plane of the saw, and a self-adapting mechanism for making pressure on the opposite face of the board to hold that face of the board which is to be gauged in contact with the gauging and guiding mechanism as it is advanced to the cutting edge of the saw, the said gauging and guiding and the self-adapting mechanism being such as to force and hold the gauged face of the board against the face of the gauge, and to force or bend out the warps or bends of the plank when they are warped or bent, the said gauging and guiding mechanism consisting of two parallel rollers or an equivalent therefor, and the said self-acting mechanism consisting of two yielding pressure-rollers, or an equivalent therefor, under the said combination.

And my said invention also consists in connecting the gauging and the self-adapting pressure-rollers, or either, when the principal of the first part of my invention is applied by means of rollers with the mechanism for imparting motion to them by means of universal joints, that the axis of the gauging rollers may be maintained in a plane parallel with the plane of the saw, at whatever distance from the plane of the
146 saw they may be placed, and that the rollers which force the board against the gauge-rollers or other gauge may adapt themselves to the face of the boards, however the boards may vary in thickness one from another, or from end to end, or from edge to edge.

And my invention also consists in the method of straining the saw by means of two stirrups, one secured to the end of the saw towards the back edge, and the other towards the front edge, and these two stirrups in turn being connected by a play-joint, with a third or straining stirrup connected with the saw-frame or gate.

The frame represented in the accompanying drawings is adapted to the purpose, but may be varied at pleasure. The saw-frame is much lighter and narrower than the ordinary one. I strain the saw by the following contrivance instead of the common stirrup. I use bolts as at Figures 1 and 6, which pass through the upper and lower girts of the gate, and are secured and strained by nuts; one end of the bolt is fastened and passed through a stirrup, (*b*,) Figure 6, which rests on a pin passing through said bolt, as at (*c*).

The stirrup is susceptible of a vibration as well as lateral movement; at each end of this stirrup is another stirrup in form of an inverted V, as at (*d d*), resting on pins (*e e*). These stirrups also may vibrate and move laterally by means of oblong holes, as at (*a*), Fig. 7.

The ends of stirrup (*b*) are open or slit so as to receive the end (*a*), Fig. 7. The lower ends of the stirrups (*d d*) are also open or slit so as to receive the saw of which (*e*) is a section. The holes in the saw and in the stirrup (*d d*) are to receive pins or rivets. By means of the oblong holes as (*a*), Fig. 7, the saw may have an equal strain, and by a lateral shift of stirrup (*b*) on the pin (*e*) the strain may be thrown on the front of the saw, and give the saw more or less rake. By means of a bolt as (*a*), Fig. 6, passing through the centre of each girt, not only the saw is kept in place, but the gate is kept in proper trim or balance and not allowed to twist or warp, and this construction requires much less weight of metal or material. In addition to the straining apparatus already described for stiffening the saw, I use the following apparatus,
147 similar to that described in letters-patent granted to me June 7th, 1838.

In order to be able to use a very thin saw, I make use of the following contrivance for keeping the saw true and preventing its running aside:

Between the two centre-posts of the frame and at suitable height is placed the stock (1 1), Fig. 1, containing rollers (2 2), between which the saw moves; by regulating screws, these are kept in place. A grooved roller (3) in front of the saw is used for the purpose of keeping the board from rising, and opposite to this, and back of the saw, is another like roller not visible; in the drawing (4 4) is a piece extending up from the stock passing through a mortise or opening in the frame-piece (5 5) with the rack (6).

In the frame-piece (5, 5) is a pinion below (6) by which the rack is raised or lowered to regulate the height of the stock and rollers; on the right in the piece (4, 4) is a series of holes (4x, 4x) to receive a pin to retain or hold up the piece (4) with the stock and rollers.

Instead of a series of holes and a pin, a ratchet and hand may be used for this purpose; the ratchet may be on the shaft of the pinion which raises the rack. The cross part (7, 7) is a horizontal extension of (4, 4) sliding against the upright fender posts to keep the piece (4, 4) and stock and rollers steady. There is also another stationary stock and rollers below the platform (*b*, *b*) for the same purpose of regulating or steadying the saw.

The rollers are out of view in Fig. 1, but represented in the sectional figure 1xx of the platform (*b*, *b*). To hold the board or plank to be sawed, I use the following apparatus: On the platform (*b*, *b*), Fig. 1, is a cross slide platform or carriage (*c*, *c*) which is moved laterally on the first platform, by means of a set screw, as at (*d*), Fig. 1. On this platform (*c*, *c*) are arranged the vertical rest or gauge rollers (*e*, *e*), Figures 1 and 2. Figures 1 and 2 is a metal frame to support the rollers which in these figures are represented as being on one shaft, having the projecting
148 bearings (*g*, *g*, *g*), Fig. 2, and the lower bearings are in the platform (*c*, *c*), Figures 1 and 2. There is another set of rollers at (*i*, *i*, *i*), Figures 1 and 2; these last also consist of 2 sets corresponding with the first set (*e*, *e*). By the horizontal pieces (*k*, *k*) the sets are connected, and they form bearings and supports for them. Through the pieces (*k*, *k*) passes a shaft (*l*) which also passes through the lever (*m*,) which lever (*m*) has for its fulcrum the shaft (*n*, *n*), and this shaft (*n*, *n*) is supported at the top by the frame (*o*, *o*). By an arrangement of holes or bearings (*p*, *p*) the position of the shaft (*n*, *n*) may be shifted to suit different thicknesses of timber. The shaft (*l*) is placed in the pieces or levers (*k*, *k*) so as to come sufficiently between the two sets of rollers (*i*, *i*) to have a partial effect of the lever (*m*) on the near rollers or those which introduce the boards.

The lower part of the shaft of the rollers passes down through a slot (*p*) in the slide (*c*,*c*), (see *q*x, Fig. 2). The board, an end view of which is represented by the dots (L^2) being placed between the rollers, then by means of the lever (*m*), which possesses suitable elasticity, and the winch, drum, cord, and ratchet and hand, as at (S. S.) Fig. 1, the rollers connected with the lever press the board against the rollers (*e*,*e*) and thus grip the board. The shaft of the rest or guage rollers (*e*, *e*) passes through the platform (*c*, *c*) as seen at the right hand (*q*), Fig. 2. The lateral movement of the carriage (*c*, *c*) by means of the set screw (*d*), Fig. 1, is for the purpose of regulating the thickness to be cut, as the rollers in the frame (*g*, *g*) are by this means thrown nearer to or farther from the plane of the saw. The rollers on each side of the board turn in towards each other to advance the board towards the saw, and the rollers on each side

nearest the saw have the shafts extended down to the driving wheels (*t*), Figures 1 and 2; and (*u*, *u*, *u*), Figures 1 and 2, is a frame-work which supports and holds the parallel posts (V.V.) of the shafts, which retain the same relative position to each other. This frame-work (*u*, *u*) is supported by the timbers (*u*x) and (V.x). As the rollers (*e*, *e*) and (*i*, *i*), to accommodate different thicknesses of stuff, re-
149 quire either to approach to or recede from each other, it is requisite to use universal joints in the axles as at (g,x g,g,$^1g^1$), Fig. 2 (W.) Fig. 2, being the feeding-ratchet on the same shaft with the mitre wheel (L. and W.). Fig. 5 is a side view of the said feeding-ratchet with the pawl (*y*), is the feeding-rod which moves the ratchet. The lower end of this feeding-rod rests on the horizontal piece or lever (1). This lever has a groove represented by the dots in which the tongued base of the feeding-rods rests; (2) is a cord attached to the rod and also to the end of a spring, (3), which may be of wood or metal of suitable length to give the requisite motion; (4) is a cord attached to the feeding rod or hand which passes around a pulley (5) and extends to a fastening (6) convenient to the tender; (6,x), Fig. 1, is the fastening; (7), Fig. 5, is a cord attached to the feeding-hand near the top which extends downwards to a horizontal spring, (8). The position and arrangement of parts represented by 2, 3, 4, 5, and 6 are to place and retain the hand (*y*) on any part of the lever, on a portion of the frame of the mill; (10) is a roller in the end of lever (1) on which plays the eccentric driver (11).

The circle (12) represents the driving pulley (12) of Fig. 1; (13), Fig. 5, is the shaft of the eccentric driver (11), pulley (12), and fly (14), driven by wheel (15), and belt (16) of Fig. 1; (17, 17), Fig. 1, is the connecting-rod between the crank-pin on the flyw-heel and the gate. To saw diagonally, the feeding-rollers at the right as (*a*, *a*, *a*), Fig. 3, are put in the position represented in this figure by means of universal joints between the rollers made and mounted as represented at (1) (2) in the sectional Fig. 4; (*b*, *b*, *b*), Fig. 3, are pieces of stuff to be sawed confined by the feeding rollers. The dotted lines represent the line of the cup of the saw.

Instead of three rollers one above the other, more or less may be substituted. From the foregoing, it will be seen that the saw-gate is operated by crank-motion in the usual manner, and the saw, which, should be thin for the purpose of resawing boards, is guided and kept true in its motion by the guide-rollers (2, 2), but as no part of this arrange-
150 ment makes part of my present invention other suitable arrangements may be substituted at the pleasure of the constructor.

The board to be resawed or slitted is introduced between two sets of rollers, (*e*, *e*) and (*i*, *i*), with one edge resting on the platform (*b*) of the frame, and its surface griped between the two sets of rollers by drawing the lever (*m*), which causes the rollers (*i*, *i*) to operate as pressure-rollers. When thus griped the board is carried forward or fed to the edge of the saw by means of the rotating motion given to the rollers, thus constituting them at the same time feed-rollers. And whilst the board is acted upon by the saw, it is prevented from being lifted up by passing under the rollers, (3, 3), the position of which is regulated to suit different widths of boards by the sliding and adjustable frame-work in which they are hung.

As the gauging and guiding apparatus is placed near to the cutting edge of the saw, and the self-adapting pressure apparatus effects the griping of the board against the gauging apparatus and across the entire breadth of the board, and with a force sufficient enough to bend out the warps or bends, and to hold the board firmly during the cutting action of the saw, it follows that, however the board may be warped or

bent, it will be presented to the cutting action of the saw in a straight plane parallel with the plane of the saw, although, after pressing the saw, the two parts into which it is divided will resume the warps or bends of the original board; so that, in constructing such a machine, care must be taken not to place the gauging, guiding, and pressing apparatus at too great a distance from the cutting edge of the saw; and whatever modification may be made in the mechanism for gauging and guiding the board, and for making pressure to hold it against the gauge or guide, they must in combination perform the function of bending out the warps or bends of the boards, if they be bent or warped, in the direction of the length or breadth, or both, and keeping them straight along that portion of their length for the time being which ex-
151 tends to the cutting edge of the saw; and the pressing apparatus must extend across the entire breadth of the boards, and, in making pressure, must be self-adapting to the varying thickness of the boards, not only in the direction of the length, but also in the direction of the breadth, that its gauged face may be maintained in the required plane, whether its upper edge be of the same or of greater or less thickness than its lower edge. And if the machine be intended for slitting boards to different thicknesses, the gauging apparatus must be capable of ready adjustment towards or from the plane of the saw; but, as an equivalent therefor, the saw-frame, or that which controls the saw, may be made to shift towards or from the gauge, although I prefer the shifting of the gauging apparatus.

And although I have above described the gauging and pressure apparatus as performing also the operation of feeding or advancing the board to the saw, it will be obvious that the feeding operation may be performed by other means, in which case the gauging and directing function may be performed by a flat gauge or other equivalent means, provided it presents a surface of sufficient extent against which to press that face of the board which is to be gauged, that the warps or bends may be forced out if the board be warped or bent. And so with the apparatus for making pressure against the opposite face of the board; although rollers for this purpose are, in my judgment, the best, nevertheless, if other means be employed for feeding or advancing the board, non-rotating bars may be employed, provided they be so arranged as to make the required pressure on the face of the board, and they be made self-adapting to the varying thickness of the board as before described; and although two rollers or bars are required for making pressure when the gauging apparatus consists of two rollers, a single roller or bar may be substituted as an inferior equivalent when a plate is substituted for two rollers as a means of gauging and guiding, as it will be obvious that a single pair of rollers, one for gauging and the other for making pressure, cannot bend out the warps or bends of the board, nor
152 guide it in the plane of the saw; nor can a single roller for making pressure answer the purpose in combination with two gauge-rollers for gauging and guiding, for if placed opposite to one of the gauge-rollers, they will simply act as a single pair, and if placed opposite the space between the two gauge-rollers, there will be no resisting surface opposite the line of pressure, and, in consequence, if the pressure applied be sufficient to bend out the warps of the stiffest part of a plank, which is a necessary condition, it will bend the weak parts too much, and hence fail to present the board in a true plane to the action of the saw.

And although I prefer the mode herein described of hanging and straining the saw, as it enables me to use a thinner saw than by the use of any other known means, nevertheless I do not wish to be understood as limiting myself to the use of all the parts of my invention in connection, as the mode of gauging, guiding, and presenting the board may be advantageously employed in connection with any other mode of straining the saw, or in fact with any kind of mill-saw, suitable to slitting boards.

What I claim as my invention and desire to secure by letters-patent is the mode of operation substantially as herein described, of *gua*ging, guiding, and presenting boards to the action of the saw, which mode of operation results from combining with a slitting-saw the mechanism substantially as described for gauging, and guiding one face of the boards, and the mechanism for making a self-adjusting pressure, substantially as described, on the opposite face of the boards, so that the boards will be clamped between the two said mechanisms on opposite faces and immediately in front of the cutting edge of the saw so as to present the gauged face of the boards, however warped or bent they may be, in a plane parallel with the plane of the saw, as set forth.

And I also claim, in combination with a slitting-saw, and the arrangement of the gauge and pressure-rollers, substantially as described, connecting the said gauge and pressure-rollers with the mechanism
153 from which they derive motion by means of universal joints, substantially as and for the purpose specified.

And I also claim the method, substantially as herein described, of hanging and straining the saw by the combination of the three stirrups at the ends of the saw, constructed and connected in manner substantially as herein described.

PEARSON CROSBY.

Witnesses:
WILLIAM H. BISHOP.
JOEL B. WILSON.

Ex.: J. A. W.

Defendant's exhibit No 4.—A. K. Post, ex'r.

No. 8022.

The United States Patent-Office, to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters-patent granted Pearson Crosby.

Dated 8th April, 1850.

In testimony whereof I, Samuel S. Fisher, Commissioner of Patents, have caused the seal of the Patent-Office to be hereunto affixed this sixteenth day of May, in the year of our Lord one thousand eight hundred and seventy, and of the Independence of the United States the ninety-fourth.

SAMUEL S. FISHER,
Commissioner.

154 No. 8,022.

The United States of America, to all to whom these letters-patent shall come:

Whereas, Pearson Crosby, of Fredonia, N. Y., has alledged that he has invented a new and useful improvement in sawing-machines, which

he states has not been known or used before his application; has made oath that he is a citizen of the United States; that he does verily believe that he is the original and first inventor or discoverer of the said improvement, and that the same hath not, to the best of his knowledge and belief, been previously known or used; has paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents, signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Pearson Crosby, his heirs, administrators, or assigns, for the term of fourteen years from the eighth day of April, one thousand eight hundred and fifty-one, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Crosby in the schedule hereunto annexed, and is made part of these presents.

In testimony whereof I have caused these letters to be made patent, and the seal of the Patent-Office has been hereunto affixed.

Given under my hand at the city of Washington, this eighth day of April, in the year of our Lord one thousand eight hundred and fifty-one, and of the Independence of the United States of America the seventy-fifth.

[L. S.] ALEXANDER H. H. STUART,
Secretary of the Interior.

Countersigned and sealed with the seal of the Patent-Office.
THOS. EUBANK,
Commissioner of Patents.

155 The schedule referred to in these letters-patent and making part of the same.

To all to whom these presents shall come:

Be it known that I, Pearson Crosby, of Fredonia, New York, have invented certain new and useful improvements in saw-mills, for slitting or resawing plank and other timber with circular saws, and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making part of this specification, in which Fig. 1 is a plan of my improved saw-mills, Fig. 2 a side elevation, and Fig. 3 and 4 cross-vertical sections taken at the line *a a*, of Fig. 1, and looking in opposite directions.

The same letters indicate like parts of all the figures.

The use of the circular saw, which presents in some respects important advantages over the reciprocating saw, has not been heretofore successfully applied to resawing or slitting planks and other lumber, except very narrow lumber, for the reason that when such saw is made of the requisite diameter it will buckle, and to prevent this, it must be so thick as to be wasteful of the lumber and of the power applied to drive it.

This difficulty has been overcome for the purpose of sawing veneers by making the saw of a convex form on that face of it over which the veneer passes as it is cut from the log, but this method cannot be used for what is called resawing or slitting planks or lumber, for the reason that, from the thickness of the two parts, they are too stiff and rigid to pass over the thick part of the saw, when made all on one face, and even if the additional thickness were made equally on both faces, the

binding on the saw-plate would be so great as to present a serious resistance to its rotation.

The object of my invention is to construct and apply the circular saw to the slitting or resawing of planks or lumber, as to avoid all the objections above pointed out to this end.

156 The nature of my invention consists in making a circular-saw with both faces convex or swelled, so that it shall present a thin edge where the teeth are cut, to avoid waste of the lumber and reduce the resistance in cutting, and be gradually thicker towards the shaft to give it the requisite thickness, to prevent bu'kling and insure a steady motion at the periphery, when this is combined with a fixed, leveled gauge, placed near the periphery of the saw on that side of the shaft opposite to where the lumber is presented to the teeth, so that the said gauge shall separate or spread the two parts of the plank as they are being cut and prevent them from binding against the faces of the saw. In the accompanying drawings, *a* represents a circular-saw, mounted on an appropriate shaft, *b*, which runs in boxes in the usual manner in a frame, *c*, of any proper form. The shaft is provided with a pulley, *d*, as usual, to receive a belt from any first mover. This saw is made convex on both faces, so as to be of considerable thickness towards the shaft, and thin at and near the periphery. Back of the saw, and firmly attached to the frame, is a metal guide, which, in form, is the segment of such a circle that, when placed near the periphery of the saw, it shall be concentric therewith.

The edge of it next the saw is sharp, or nearly so, and it is gradually thicker towards the back, for the purpose of so spreading the plank as to prevent binding or rubbing against the faces of the saw.

The plank *e* is presented to the edge of the saw by two sets or rollers, the one set f, f, f^1 constituting the guide or bed rollers. They are mounted in a frame *g*, which can slide latterly in the main frame, and be adjusted to determine the thickness of one part of the plank to be slit, by means of a set-screw f^2, and this frame, g'', is made in two parts, the vertical part being connected with the horizontal part by a hinge-joint of any kind at the bottom, and the top is connected by adjusting jointed screws *i*, *i* so that the axis of the rollers may be set to any desired angle with the plane of the saw, to adapt the machine to the sawing of plank thicker at one edge than the other. One of these rollers has its

157 lower journal connected with a vertical shaft j' in the lower part of the frame by a rod, *k*, and two universal joints, so that the rollers may be changed in position and still secure motion from the shaft j', which shaft has a spur-wheel, *l*, which engages the cogs of another spur-wheel, *m* of equal diameter on another shaft, *n*, which carries a bevel-wheel, *p*, engaging a corresponding bevel-wheel (*o*) on the shaft of a band-wheel, *q*, over which passes a band, *i*, from a pulley on the end of one of a pair of conical rollers which receive motion by a band from the shaft of the saw. In this way the feed-motion for the plank is obtained, and the conical rollers admit of varying the feed in the usual manner.

By the side of the rollers just described is the other set S, S, S′, mounted, two in one frame, *t*, and the third in another frame, *u*, and the two frames are connected by a spring, *v*, with an adjusting-screw, *w*, by means of which the two sets of rollers can be brought nearer together or farther apart to suit the thickness of timber intended to be slit or resawed, the spring giving the requisite play to the rollers to enable them to adapt themselves to the varying thickness of the plank as it passes through, whilst at the same time its tensive force should be sufficient to bend out of the plank any warps and insure its presentation to the edge

of the saw in a proper manner so that one part of the plank when slit shall be of equal and uniform thickness. The roller S′ of this set is connected with the shaft *n* by means of a rod, *x*, by two universal joints, so that one of the rollers of each set taken together act as feed-rollers to propel the plank towards the saw. Although this gearing may be dispensed with and the plank be fed forward by other known mechanical means, such as an endless chain. When the two geared rollers are used for the purpose of feeding the board, one or both of them should be fluted.

Having thus pointed out the nature of my invention, and the manner in which I have essayed the same with success, I will state that I do not wish to limit myself to the precise mode of constructing and arranging the parts, as these may be variously modified without departing from the principle of my invention. But,

158 What I claim as my invention and desire to secure by letters-patent is making the circular saw with both faces convex in the manner, and for the purpose substantially as specified, when this is combined with the guide, substantially as specified, for spreading apart the plank to prevent the binding of the saw, as specified.

PEARSON CROSBY.

Witnesses:
ROBERT W. JONES.
MASON NAYLOR.
Ex.: J. A. W.

Defendant's exhibit No. 5.—A. K. Post, ex'r.

The United States Patent-Office, to all persons to whom these presents shall come, greeting:

This is to certify that the annexed is a true copy from the records of this office of the letters-patent granted Andrews & Sproat, dated Dec. 31st, 1839, No. 1457, for "Impt. in the manner of relieving the collar of a circular saw from the friction occasioned by the article sawed."

In testimony whereof I, Saml. A. Duncan, Acting Commissioner of Patents, have caused the seal of the Patent-Office to be hereunto affixed, this fifth day of November, in the year of our Lord one thousand eight hundred and seventy, and of the Independence of the United States the ninety-fifth.

SAML. A. DUNCAN,
Acting Commissioner.

159 No. 1457.

The United States of America, to all to whom these letters-patent shall come:

Whereas Manassah Andrews and James Sproat, of Taunton, Mass., have alleged that they have invented a new and useful improvement in the manner of relieving the collar of a circular saw from the friction occasioned by the article sawed, which they state has not been known or used before their application; have made oath that they are citizens of the United States; that they do verily believe that they are the original and first inventors or discoverers of the said improvement, and that the same hath not, to the best of their knowledge and belief, been previ-

ously known or used; have paid into the Treasury of the United States the sum of thirty dollars, and presented a petition to the Commissioner of Patents signifying a desire of obtaining an exclusive property in the said improvement, and praying that a patent may be granted for that purpose:

These are, therefore, to grant, according to law, to the said Manassah Andrews and James Sproat, their heirs, administrators, or assigns, for the term of fourteen years from the thirty-first day of December, one thousand eight hundred and thirty-nine, the full and exclusive right and liberty of making, constructing, using, and vending to others to be used, the said improvement, a description whereof is given in the words of the said Andrews & Sproat in the schedule hereunto annexed, and is made part of these presents.

In testimony whereof I have caused these letters to be made patent, and the seal of the Patent-Office has been hereunto affixed.

[L. S.]

160 Given under my hand at the city of Washington, this thirty-first day of December, the year of our Lord one thousand eight hundred and thirty-nine, and of the Independence of the United States of America the sixty-fourth.

JOHN FORSYTH,
Secretary of State.

Countersigned and sealed with the seal of the Patent-Office.

HENRY L. ELLSWORTH,
Commissioner of Patents.

The schedule referred to in these letters-patent, and making part of the same.

To all whom it may concern:

Be it known that we, Manassah Andrews, of Bridgewater, in the county of Plymouth, and James Sproat, of Taunton, in the county of Bristol, and both in the Commonwealth of Massachusetts, have invented a new and improved mode of relieving the collar of a circular saw used for the purpose of sawing boards, shingles, and other like articles, from the friction occasioned by the pressure of the article sawed, as it is separated from the block, upon the collar of the saw.

The nature of our invention consists of the insertion of a thin semicircular plate of steel, or other substance of sufficient strength, into the collar of the saw, which collar is countersunk to the distance from the center desired in a circular manner, of sufficient depth to receive the said plate below the surface of the collar, and which plate, being
161 secured at both ends to the frame upon which the saw runs, receives upon its edge the article sawed as it is separated from the block, and before it reaches the center or thickest part of the collar, by which means all the friction is saved which would otherwise be occasioned by the pressure of the article sawed upon the collar while in a state of revolution, and before it passes the center or thickest part of the collar. In short, the plate being stationary and thicker than the collar, opens the article sawed from the block, and saves any friction upon the collar or strengthener.

What we claim as our invention, and desire to secure by letters-patent, is the countersink in the collar, as before described, and the insertion of the stationary plate or reliever, as above described, in such man-

ner as to receive upon its edge the article sawed as it is separated from the block, and before it reaches the center or thickest part of the collar.

The drawing hereto annexed correctly represents the construction and working of said improvements.

MANASSAH ANDREWS.
JAMES SPROAT.

Witnesses:
H. G. O. COLBY.
JAMES P. ELLIS.

Exd.: C. E. L.

162 *Defendant's exhibit No.* 10.—*A. K. P., ex'r.*

Before the Commissioner of Patents, in the matter of the application of John Myers and Robert G. Eunson for an extension of letters-patent granted to them May 23d, 1854, for improvements in machinery for sawing thin boards.

Statement of ascertained value of invention and account of receipts and expenditures, filed under rule 69 *of Patent-Office. Ed. of* 1867.

To the honorable the Commissioner of Patents of the United States:

We, John Myers, of New York, in the city and county and State of New York, and Robert G. Eunson, of the same place, hereby, in accordance with law, submit the following statement of the receipts and expenditures of said Myers and Eunson by reason of the invention referred to in the above-entitled matter, together with a statement of the ascertained value of the said invention.

From 1845 to 1850 your petitioner, the said Myers, was engaged in the business of sawing thin boards and resawing lumber, with a reciprocating sawing-machine, and during that time, becoming convinced
163 of the deficiency of the methods then in use, both in regard to their imperfections in securing the lumber to be sawn, and in their waste of material and insufficient speed, he turned his attention to the improvement of the art.

In June, 1850, after having been constantly engaged in experiments, the said Myers became acquainted with your petitioner, the said Eunson, who was then engaged in building and operating the Barlow planing-machine, and having imparted to him his plans, your petitioner, the said Myers and Eunson, became associated in their endeavors to perfect their projected improvements in machinery for resawing lumber.

The said Myers, at that time being in the employ of one Grandine Van Zile, in the city of New York, entered into an arrangement with said Van Zile, by which said Myers and Eunson agreed to construct a resawing machine, embracing the improvements intended for the benefit of said Van Zile, and said Van Zile agreed that he would thereupon pay the expenses of patenting the same, and allow them to exhibit the said machine, and give them a $\frac{2}{3}$ interest in the machine.

In 1852 the said Eunson made a set of patterns for a four-foot machine, which was constructed in 1853, and which contained the deflecting-plates described in their patent, which were improved and perfected by Mr. Myers, in the spring of 1854, who was at that time running the sawing-machine in question.

At the same time was added the adjustable and flexible clamps, independent in their action of the roller-beds.

The object of the deflecting plates was to lessen friction, to enable the operator to make use of a much finer saw than could otherwise be employed, and thereby save valuable material, and to avoid the necessity of any lengthened process of planing of the resawed stuff. It was found, with the ordinary saw, that a large quantity of material was destroyed in the kerf made by a saw of the thickness requisite to give the necessary strength, and also that with an ordinary circular saw, when used for resawing, the pressure of the material against the sides of
164 the saw was productive of a very great friction, necessitating the employment of much greater power, if not altogether preventing work; and also more rapidity by the heat and friction and wearing out the saw.

To obviate these defects the deflecting plates were introduced, which not only enable the saw to be strengthened to any required amount, at the same time preserving a delicate edge, but by deflecting the thin portion of the sawn material from the blade almost destroys the otherwise great friction which ensues, and avoid its bad effects.

The object of the other departments of the invention are set forth in the patent, and sufficiently explain themselves.

In 1854 your petitioners obtained a patent for their said invention, which is the same for which application is made for an extension, the said Grandine Van Zile paying the necessary fees in the matter, but your applicants were obliged, in order to procure these funds, and the cooperation of the said Van Zile, to grant to him a free exclusive license to use the said invention, (within the district of the city of New York, which embraced all the dealers in lumber, and which was by far the most promising territory in the United States,) and also a third interest in the whole patent.

Early in the spring of 1855, your petitioners formed a company, under the name of the New York Resawing Company, consisting of Joseph Staples, Thomas Angus, and themselves; purchased a mill in New York, and put in operation two of the said patent sawing-machines and other machinery, but although the sawing was perfectfy successful, your applicants had not sufficient means to compete successfully with other establishments, and during the next winter were forced by lack of capital to conclude their business with a loss of 750, and an individual loss to your applicant, the said Eunson, of $500, in addition thereto, which was loaned to him, and which he was opliged to secure by a partial assignment of his interest in the patent.

In June, 1855, your applicants sold to Giddings and Brown the
165 right to the east side of New York City, who purchased two machines and put them in operation; but these were not successfully run, owing to incompetent sawyers, and other co-operating causes, and soon ceased working, so that instead of realizing $10,000, as your petitioners had expected for that right, the whole amount received as per account rendered, was $1,070, and $1,000 afterwards paid by one Isabella Stuart, as assignee of said Giddings & Brown, less $250, paid for commissions to the agent who negotiated the sale.

In January, 1855, your applicants granted to one Nathan Cobb, a license to use the patented machine in the city of Chicago and elsewhere, but the license only produced your applicants $26, prior to the division of territory hereinafter mentioned, when the State of Illinois was transferred to Daniel H. Carpenter, and no further profits have been received from that source.

About the first of January, 1856, your petitioners made a division of territory with Daniel H. Carpenter, who had become entitled to the one-

third interest formerly granted to Grandine Van Zile, and by an agree ment with said Daniel H. Carpenter they transferred to him all their rights of using the machine under the patent in the State of New York, (except the city and Long Island,) Connecticut, Massachusetts, and New Hampshire, South Carolina, Alabama, Virginia, and Illinois; he releasing all claim upon the remainder of the United States; for this they recived no consideration.

Under a right granted to one Cullin, two machines were put in operation in Philadelphia, and run with the utmost degree of success, the same having cut more than one million of feet of lumber in a few months, but under the agreement with Mr. Cullin no tariff was ever paid thereon, nor were any of the conditions of the contract fulfilled, except the first payment of $2,000, the mill having been totally destroyed by fire after a few months' operation, and the loss having so completely paralyzed the energies of the operators that no machines have since been operated by the parties, and the whole agreement which gave promise of
166 the most satisfactory results to your petitioners has thereby become a complete nullity. Your petitioners were obliged to pay $667.00 commissions on the sale.

In March, 1860, your applicants granted to one Stillman Isley, the right to use one machine in the city of New York, for which they received $300, but as they had expended $185 upon the manufacture of the machine which was sold, the clean profit was only $115.

This machine and right was afterwards sold to Bogart and Peck, who have, ever since 1861, been operating it very successfully; and since 1864 have found it profitable to run another machine of the same kind, for which they paid your applicants, in all, the sum of $700. Your applicants' sales have been rendered more difficult by the fact that Huntington & Co., of Newark, New Jersey, have built infringing machines for some years. They began doing so in full knowledge of the fact that the machine they were about to build would infringe your applicants' patent, and demanded a guaranty of indemnity from the person *from* whom it was built, and afterwards confessed the fact to your applicant, Mr. Myers, and promised not to build any more, but have continued to build and sell the machines ever since.

Your applicants have repeatedly and constantly notified them of the fact of their infringement, but owing to your applicants' want of means they have never been able to prosecute them for such infringement.

Soon after the sale by Mr. Myers of one undivided half of his right to certain States and territories to Adam V. Culin, for which he received $75 in cash and notes (now worthless) for $425, he (Myers) appointed Alve J. Culin to sell for him his rights. Culin sold the right for St. Louis for $500 in cash and notes for $4,500; of the cash Mr. Myers did not receive any; as Mr. Culin has refused to account for any part thereof, and your applicant has been unable to collect the same, but of the notes, his full share, which he yet holds, but as they are now long overdue and unpaid, and as all his efforts to collect them have proved fruitless, he regards them as worthless.

167 On Mr. Culin's sale of the right to use one machine in Birmingham, Pennsylvania, to a Mr. Millinger, for $500, Mr. Myers received $200, the rest being unlawfully retained by Mr. Culin as his share of the profits; the machine was destroyed in a conflagration a few months after.

For the right to New Jersey to Logourtz, Mr. Myers received $200 and $300 more to be paid if the patent is extended. These sums comprise all that your applicants have been able to obtain, with the exception of $300 more from one Lewis, and $600 from Jones & Hunt for licenses.

Although your petitioners, during the whole period of their patent, have used unceasing endeavors to obtain the favorable notice of the public in regard to their patent, yet, notwithstanding all their efforts, their labors have resulted in the most meagre profits to themselves.

Besides the losses enumerated above, their expenses for travelling, materials, labor, rent, advertising, &c., have been large; and together with those mentioned above will be found more particularly set forth in the account of profit and loss hereto annexed. The whole net receipts of your petitioners, as thereby appears, excluding all account of the value of the time expended by your petitioners, amounting but to the paltry sum of $3,000.

The merit of their invention has, however, been recognized, and the fact is attested by almost universal use of their machine, and confessed infringements thereon, for the purpose of resawing lumber, but their insufficient means, which have precluded them from personally engaging in the business of operating their sawing-machine, and thereby has shut them out from the usual mode of enjoyment of their patent, has reduced them to the necessity of looking to other channels of profit in connection with their patent.

They have been induced to attempt to realize the just rewards of their labors by selling out States and other territorial rights, and through this means, though their invention has acquired a wide-spread notoriety, yet a singular fatality of misfortune seems to have attended their efforts; fire destroying the works of their tariff-paying license's,
168 and dishonest and indispensible agents consuming the greatest part of the fairly-earned proceeds of their sales.

But, notwithstanding all these difficulties in introducing the patent, it has steadily gained in public favor through the intrinsic merits of the invention, and the wide knowledge which your applicants and their assignees had imparted, and at the present time is performing almost exclusively the resawing business in the city of New York, its work being done without a superior in quality or competitor in speed.

For its various specific merits and its advantages over cognate contrivances, your applicants refer to the next head of this, their statement, namely:

THE ESTIMATED VALUE OF THE INVENTION.

The value of the invention patented to your applicants is estimated under several heads, as follows:

1st. The deflecting-plates render possible to use a saw of delicate edge.

(The manner of strengthening the saw is shown in the patent.)

This is important, for two reasons:

A. Because a saw with a fine edge makes a narrow kerf and saves material. This is especially important where the resawn stuff is very valuable, such as rosewood or mahogany. But it is also extremely material in ordinary lumber.

Much lumber required to be sawn comes in the form of full inch-boards; the use of a saw as fine as those constructed under this patent, by avoiding the consumption of material in the kerf, will make such boards answer the purpose of inch and a quarter boards.

If lumber is selling at $60 per thousand feet, and this saw is sawing only 1-12 of an inch to every inch of lumber, it economizes material to the value of $5.00 for every thousand feet, and sawing, as it continually

does, twelve thousand feet per diem, it saves $60 per diem to the operator where such stuff is exclusively used.

169 B. Because a delicate-edged saw gives a smoother surface to the sawn material, and avoids nearly one-half the labor of planing and smoothing.

2nd. The deflecting-plates lessen the friction upon the sides of the saw.

Immediately after being cut by the edge of the saw the deflecting-plates, which are stationary and sunk into the surface of the saw, so as to present no obstruction, and between which the saw revolves, deflect the sawn material from the sides of the saw and prevents contact.

Before the introduction of this invention, the reciprocating upright saw was the only one in practical use for resawing.

It was found impossible to use the ordinary circular saw without deflecting-plates, for the reason that the process of resawing requires the material to be held firmly against the edge, and where material is cut by a saw in the plane of its breadth, (not thickness,) the pressure against the *the* whole surface of the saw was found productive of so much friction that two results were produced:

1st. The saw becoming greatly heated by the friction, "buckled," or lost its firmness, and cut an irregular kerf, and required to be constantly removed, hammered out, and allowed to cool.

2nd. The saw was either entirely stopped by the great friction, or required a very large power to operate it.

On these accounts the use of the circular saw for resawing was impracticable. The deflecting plates, therefore, introduced into the art of resawing the circular saw, which, in addition to the very great advantages described, possesses the all-important quality of speed.

The advantage of the circular saw over the reciprocating saw in this respect is well known to all mechanics, and is principally caused by the fact that the circular saw may be fed constantly, while the reciprocating saw is fed only on the down strokes.

With the saw of your applicants, a feed of thirty feet a minute can ordinarily be used, while with the reciprocating saws a feed of ten feet a minute is about the maximum speed.

170 One saw, constructed under your applicant's patent, easily saws twelve thousand feet per diem, while an ordinary reciprocating saw rarely cuts more than 4,000, or, at most, 5,000 feet per diem. That an invention so materially increasing the speed and quality of the work performed is deserving of the highest commendation and most ample rewards, needs no lengthy demonstration.

The elastic clamps, separate in their action from the roller-beds, are also a great saving of time and labor.

If the machine requires constant adjusting to the thickness of the material, the almost unremitting attention of a single man is required, which this part of the invention obviates. For if a clamp, independent of the roller-bed, is not used to hold the material until the very last portion is sawn, it almost universally follows that upon the introduction of a piece of material into the roller-bed thicker than the one then held, that the clamp fails to hold the latter piece of lumber with sufficient firmness, and the end of the piece is rendered useless by being irregularly cut, or by splitting.

The amount of this useless portion of course varies according to the difference in variation of the thickness of the material used, and the distance of the nearest holding portion of the roller-beds from the saw;

and, though very material, cannot be valued accurately by any general estimate.

But suppose that only a single inch in each thirty-foot board is saved by the use of these independent, self-adjusting clamps, the total saving in money with a machine which saws 12,000 feet per diem, at $60 per thousand feet, will be about $2.00.

For further particulars in regard to the ascertained value of the invention of your applicants, and the profit and loss attendant upon their endeavors to their invention into public use, they refer to the testimony to be filed in this case.

171 Recapitulation of the expenditures and receipts of the said Myers & Eunson:

PROFIT.

1854, Sept. 13th. Transfer to Grandine Van Zile, by two-thirds interest in one set of pattern' made by said Myers & Eunson		$166 00
June 22, 1855. Transfer to Giddings & Brown:		
By cash on transfer	$7 50	
" tariff on sawing	20 00	
Aug. 11, 1860. From Mr. Bound, an assignee	300 00	
" Isabella Stuart	1,000 00	
		2,070 00
1855, Sept. 26. By cash from Adam V. Culin		2,000 00
" tariff from Nathan Cobb		26 00
1859, June 10. By cash from Reid Thockmorton		200 00
1866, March 9. By cash from Stillman & Isley		300 00
1864, April 16. By cash from Bogart & Peck		300 00
1864, Nov. 19. By cash from Bogart & Peck		400 00
1866, October. By cash from Jones & Hunt		600 00
1866, Dec. 19. By cash from Richard A. Lewis		300 00
1856. By cash, tariff from Crosby		25 00

172 Cash received by Mr. Myers individually:

By cash received from Millengen	200 00
" " " A. V. Culin	75 00
" " " Schueman	300 00
" " " Logowitz	200 00
Total receipts	$7,162 00

EXPENDITURES.

1855, March 1.—Expense one set patterns for five-foot machine	$504 48	
Office rent, advertising, &c	77 00	
1856, Jan. 3.—Loss on Ransom Crosslips' machine	433 41	
Stillman Isley's machine	185 00	
Expense of set of three-foot patterns	250 00	
Part of a set of five-foot patterns, the first being destroyed by fire	223 59	

Travelling expenses, say.....	230 00	
Commission on Philad. sale....	667 00	
" " sale to Giddings & Brown	250 00	
To amount of loss in operating N. Y. Resawing Company..	750 00	
Loss of Eunson on same.....	500 00	
		$4,070 00
Total receipts for fourteen years...		$3,091 52

Your applicants call attention to the fact that no estimation of
173 the value of their time expended in perfecting and introducing the invention is made in this account. If this element is considered it will be found that the total profit derived from their invention would by no means suffice to compensate them for the time they have consumed during which they have been withdrawn from their other avocations.

Your applicants also beg leave to refer to the testimony to be filed in this case, to supply all omissions and remedy all defects in their statements, if any.

All of which is respectfully submitted.

JOHN MYERS.
R. G. EUNSON.

In presence of—
FREDERIC F. BETTS.

STATE OF NEW YORK,
City and County of New York, ss:

At said city and county, on this 11th day of February, 1868, before me, the undersigned, a notary public, duly commissioned and sworn, personally came the above-named John Myers and Robert G. Eunson, to me personally known, who, being by me duly sworn, made solemn oath that they have each heard the foregoing statement and account, and that the same is true of their own knowledge, except as to the matters therein stated to be upon information and belief, and as to those matters they believe it to be true.

ANDREW H. SANDS,
[NOTARIAL SEAL.] *Notary Public.*

174 *Complainants' exhibit No. 7.—A. K. P., examiner.*

United States circuit court, eastern district of New York.

JOHN MYERS ET AL.
vs.
WHITMON KENYON ET AL. } In equity.

DANIEL DONCASTER, of the city of Albany, being duly sworn, says that he is a manufacturer of wood-working machinery, in the city of Albany; that, about the year eighteen hundred and fifty, he was engaged as foreman in the saw and planing mill of John Gibson, in the city of Albany, and had full charge of said mills, and was so engaged for about nine years, and that soon after he went there said John Gibson commenced building a machine for resawing lumber with a circular saw; that the saw used for the purpose was what is called a swedged

or taper saw, i. e., a saw which is thick in the centre and ground tapering from near the centre to the outer edge of the saw; that upon each side of said saw, and for the purpose of stiffening the saw, was a flange or collar, about twelve inches in diameter and about three-fourths of an inch thick in the centre, and which tapered down to a sharp edge at the outside; that said saw was hung in a wooden frame, with a wooden bed; that, for the purpose of diverting the lumber from the sides of the saw, and prevent the lumber from binding upon and heating the saw, plates of iron were attached to the saw-bed on each side of the saw, and
175 so adjusted as to open the board and to expand the saw-kerf, and prevent the lumber from rubbing against the sides of the saw; that said iron plates were about two inches wide and stood about three inches high, nearly parallel with the saw, and that said plates fully answered the purpose for which they were devised, and that said plates were made at the suggestion of said John Gibson, or some one in his employ, and without any previous knowledge that such plates had been used for such purpose. Deponent further saith that the said resawing machine was used in the city of Albany for resawing of lumber between the years eighteen hundred and fifty-one and eighteen hundred and fifty-three, in the mill of the said John Gibson.

DANIEL DONCASTER.

Sworn and subscribed to before me this seventh day of May, A. D. 1870.

GEORGE W. SHERMAN,
Notary Public, Albany Co., N. Y.

176 U. S. circuit court south. dist. of New York. In equity.

JOHN MYERS ET AL.
vs.
JOHN DUNBAR ET AL.

At a stated term held at the court-house in the city of New York, on the 7th day of December, A. D. 1870:

It appearing to the court now here that John Myers, one of the complainants herein, has lately deceased, leaving a will whereby he appointed his widow, Margaret Myers, sole executrix, and that on the 17th day of November, A. D. 1870, letters testamentary thereunder were duly issued to said Margaret Myers by the surrogate of the city and county of New York, thereupon, on motion of Mathews & Betts, complainants' solicitors, it is ordered that said Margaret Myers be substituted as cocomplainant with the other complainants in the place and stead of said John Myers, and that their cause proceed accordingly.

177 We consent to the entry of the foregoing order.
Dated December 6th, 1870.

KELLER & BLAKE,
Deft's. Sol'rs.

Enter order accordingly.
Dec. 7, 1870.

L. B. WOODRUFF,
Cir't J.

(Endorsed:) U. S. circuit court. John Myers et al. vs. John Dunbar et al. Order substituting Margaret Myers, ex'x, as plaintiff. Mathews & Betts, compl'ts sol'rs. Filed Dec. 7, '70.

178 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Friday, the twenty-fourth day of March, in the year of our Lord one thousand eight hundred and seventy-one.

Present, the honorable Samuel Blatchford, circuit judge.

MARGARET MYERS, EXECUTRIX, &C.
vs.
JOHN DUNBAR.

This cause coming on for final hearing on pleadings & proofs, Mr. Frederic H. Betts argues the case on part of the complainant. Mr. Charles F. Blake argues the case on part of defendant. Curia advisari vult.

179 Circuit court of the United States for the southern district of New York. In equity.

1.
MARGARET MYERS, EXECUTRIX, &C., OF JOHN Myers, Eugene S. Eunson, Eben Peek, and Gilbert J. Bogert,
vs.
JOHN FRAME, JOHN M. NICHOLS, AND WILLIAM O. Robbins.

2.
MARGARET MYERS, EXECUTRIX, &C., OF JOHN Myers, and Eugene S. Eunson,
vs.
JOSEPH H. SWIFT.

3.
MARGARET MYERS, EXECUTRIX, &C., OF JOHN Myers, and Eugene S. Eunson,
vs.
JOHN DUNBAR AND JEREMIAH HOPPER.

4.
EUGENE S. EUNSON AND JACOB LAGOWITZ
vs.
THOMAS B. PEDDIE.

Opinion of the court, May 18th, 1871.

BLATCHFORD J.: These suits are founded on letters-patent of the United States, granted May 23d, 1854, to John Myers and Robert G. Eunson, for an "improved machine for sawing thin boards," &c. The patent was extended on the 13th of May, 1868, by the Commissioner of
180 patents, for seven years from the 23d of May, 1868. On the 20th of May, 1868, Robert G. Eunson assigned to Eugene S. Eunson all his interest in the patent and in the extension thereof, and in all damages for infringing the same. On the 19th of October, 1864, John Myers and Robert G. Eunson assigned to Eben Peek and Gilbert J. Bogert all their interest in the patent for that part of the city of New York

aying west of a line running through Broadway to the Eighth avenue, ond through the Eighth avenue to the northerly limits of the city. .n the 23d of May, 1868, John Myers, Robert G. Eunson, and Eugene S Eunson assigned to Peek and Bogert all their interest in the patent for such territory for the extended term. The suit first above entitled brought for an infringement of the patent within such territory. After it and the suits secondly and thirdly above entitled were brought, John Myers, who was one of the plaintiffs in each of them, died, and Margaret Myers, his widow, was appointed his executrix on the 17th of November, 1870, and was substituted as a plaintiff in his stead, in each of them. The suits secondly and thirdly above entitled are brought for infringements of the patent within that part of the city of New York not embraced in the territory conveyed to Peek and Bogert. On the 12th of September, 1866, John Myers assigned to Jacob Lagowitz all his interest in the patent for the State of New Jersey, and all damages for infringing the same, and on the 19th of June, 1868, John Myers assigned to Lagowitz all his interest in the patent for the State of New Jersey for the extended term. The suit fourthly above entitled is brought for an infringement committed at Newark, New Jersey.

The specification of the patent states that the invention is of "improvements in machines for sawing lumber into thin stuff, for mirror and picture-frame backs, and other purposes for which thin stuff is used." It says: "The nature of the invention consists, 1st. In the employment or use of deflecting-plates, one or two, placed at the sides of a circular saw, for the purpose of preventing the sawed stuff from coming in contact with the sides of the saw, and enlarging or expanding the saw-kerf, and thereby preventing the stuff from binding against the edge of the
181 saw near its teeth. The deflecting-plates also allow the saw to be stiffened by a proper plate secured to it, and a thin veneer-saw may consequently be employed, which will cause but a small waste of stuff in sawing, as a narrow kerf is made thereby. 2d. Our invention consists in the employment or use of elastic clamps, attached to the ordinary adjustable and elastic beds, between which the stuff is fed to the saw. The clamps above mentioned have an elasticity independent of the beds, and compensate for the varying thickness of the different pieces of stuff to be sawed by holding firmly the extreme end of the stuff, and keeping it in proper position to the saw, however much the elastic beds may be expanded by a succeeding piece of stuff of greater thickness. 3d. Our invention consists in the employment or use of knives or cutters, secured to the adjustable beds, and so arranged as to cut or smooth off the rough and projecting sides of the stuff at the ends, making it of uniform thickness. 4th. Our invention consists in the combination of an adjustable bed and circular saw, arranged as will be hereafter shown." Then follows a description of the machine. A shaft runs transversely across the front part of a frame. On the shaft is placed a circular saw, formed of thin steel plate and such as is used for sawing veneers. On one side of the saw, a circular plate, somewhat less in diameter than the saw, is secured by rivets or screws. This plate stiffens the saw, and, without its use, a comparatively much thicker saw would be required. There are two deflecting-plates, placed one at each side of the saw. The deflecting-plate, which is on the same side of the saw with the stiffening plate, covers the upper part of the stiffening-plate and the inner end of it does not project outward from the saw quite as far as the outward end of it. The deflecting-plate on the opposite side of the saw is rather smaller in diameter than the other deflecting-plate, and projects from the saw at about an equal dis-

tance at both ends. There are two feed-roller beds placed vertically in the back part of the frame, and parallel with each other. Both of these beds are made adjustable by screw-rods, which bear against the sides of the beds, the screw-rods of each bed being operated simulta-
182 neously by means of chains passing around small toothed wheels at the ends of the screw-rods. There are two cranks, one of which is attached to one of the toothed wheels of each bed. The beds also have a lateral elasticity given them by means of India rubber or other springs attached to them in any proper manner. There are four feed-rollers placed in the beds, two rollers in each bed. The feed-rollers project some distance beyond the inner edges of the beds. There are two clamps attached to the inner ends of the beds. At the back part of each clamp there are two journals, one at the top and one at the bottom. These journals fit in boxes which work or slide in recesses in the top and bottom pieces of the beds. There are set-screws, which pass transversely through the top and bottom pieces of each bed, the inner ends of which bear against India-rubber springs which are placed directly back of the boxes. There are two India-rubber springs at the top of the clamps, one spring to each clamp. These springs are placed between the clamps and set-screws which *which* pass transversely through the top pieces of the beds. There are two stops, which pass through the top pieces of the beds, one through each top piece, and regulate the distance of the lateral vibration of the clamps. Then follows a description of the knives or cutters referred to, but they are not involved in any of these suits. Motion is given to the feed-rollers by proper gearing at the lower part of the rollers. The beds are adjusted relatively to the saw, so that the stuff may be sawed into the desired thickness. Either side of the saw may be made the "line side" by fixing permanently or destroying the elasticity of the proper roller-bed. The stuff is placed between the feed-rollers in the beds, and, motion being communicated to the saw and feed-rollers, the stuff is fed towards the saw and cut by it, the two pieces being prevented from bearing against the sides of the saw by means of the two deflecting-plates. When the outer end of the stuff has passed the innermost feed-roller, the clamps bear against the stuff and hold it in a proper relative position to the saw. A fresh piece of stuff is then placed between the feed-rollers and forces forward the preceding piece. If the new piece of stuff is rather thicker than the preced-
183 ing piece, it merely acts upon the beds, and forces the elastic one farther from the permanent one, without affecting the clamps, which have an independent elasticity, owing to the springs. If it is desired to saw stuff two inches in thickness into two strips, one of which is to be a quarter of an inch in thickness, that strip, being the thinner one, may be deflected by the plate which is onthe same side of the saw as the stiffening plate, as that deflecting plate is inclined or projects outward from the saw farther than the other deflecting plate. The roller-bed in line with deflecting plate which is on the same side of the saw as the stiffening plate is permanently fixed at one-quarter of an inch from the side of the saw. The opposite bed being elastic, the side of the saw on which the thin strip passes is the "line side." The opposite side of the saw may be made the "line side" by permanently fixing the opposite roller-bed, and allowing the other one to remain elastic. The patentees state that, by these improvements, they can employ a thin veneer-saw, and consequently a small amount of stuff is lost, as the saw-kerf is narrow; and that the stuff to be sawed is always kept in a proper relative position to the saw, when varying in thickness. The specification

says: "We do not claim the adjustable and elastic roller-beds, F, F, for they have been previously used." The first, second, and fourth claims of the patent, which are the only ones involved in these suits, are as follows: "1st. The employment or use of the deflecting plates, E, E^1, one or both, placed at the sides of the saw, as herein shown, for the purpose of preventing the sawed stuff from bearing against the sides of the saw and expanding the saw-kerf, and also for the purpose of allowing a thin veneer-saw to be stiffened by plates D, one or two, as desired." "2d. The employment or use of the clamps, I, I, arranged as herein shown, or in an equivalent way, so as to have a lateral elastic movement independent of the roller-beds to which said clamps are attached, for the purpose of compensating for the varying thickness of different pieces of stuff, and keeping them in a proper relative position to the saw." "4th. The employment of an adjustable bed, F, with
184 clamps, as described, in combination with the saw, C, when the saw has a stiffening plate, D, in line with said bed, by which the stiffened or rounded side of the saw is made the 'line side.'"

After these suits had all of them been brought, Eugene S. Eunson and Margaret Myers, executrix of John Myers, filed in the Patent-Office (but when does not appear) a petition, dated November 30th, 1870, signed by then, which states that they are the joint and exclusive owners of the patent for the whole of the United States, except the State of New Jersey, owned by Eugene S. Eunson and Jacob Lagowitz, jointly, the city and county of Philadelphia, owned by persons unknown to them, and all that portion of the city of New York lying west of Broadway and the Eighth avenue, owned by Eben Peek and Gilbert J. Bogert; and that they thereby enter their disclaimer to that part of the first claim of the patent "which covers the employment or use of the deflecting-plate E," (which is the deflecting-plate on the same side of the saw with the stiffening-plate,) "at the side of the saw, thereby causing the said claim to include only the combination of the saw described with both of the deflecting-plates, E, E^1, when both of said deflecting-plates are used at one and the same time, in the manner and for the purposes described in said patent." The disclaimer then states that the said first claim of the patent will accordingly be as follows: "1st. The employment or use of the deflecting-plates, E, E^1, both placed at the sides of the saw, as herein shown, for the purpose of preventing the sawed stuff from bearing against the sides of the saw, and expanding the saw-kerf, and also for the purpose of allowing a thin veneer-saw to be stiffened by plates, D, one or two, as described; that the petitioners also desire to disclaim that part of the patentees' description of their invention wherein they say that the nature of the invention consists, first, in the employment or use of deflecting-plates, "one or two," placed at the sides of a circular saw, &c., and to limit the nature of the invention to which claim is made to the combination with the saw of the two deflecting-plates, one at each side of the saw, as described; and that the
185 disclaimer is to operate to the extent of the interest in the patent vested in the petitioners.

In the suit against Frame, Nichols, and Robbins the answer admits the use by the defendants of a machine for sawing thin boards, but denies that it infringes the patent. It also sets up a prior knowledge and use of the patented inventions by Charles Turner, Isaac Smith, John N. Lyman, Daniel Doncaster, James Hay, Henry McGoffin, James Moses, C. M. Whiting, George W. Cook, Alvah Metcalf, William Rockwood, and the defendants. It also sets up as containing prior descriptions of such inventions Holtzapffel's Mechanical Manipulation, London, 1847,

volume 2, pages 809 to 813; letters-patent of the United State to Manassah Andrews and James Sproat, granted December 31st, 1839, to Pearson Crosby, granted April 8th, 1851, and to Pearson Crosby, granted November 3d, 1841, re-issued March 10th, 1849, extended October 30th, 1855, and re-issued April 28th, 1857; and letters-patent granted in England to Auguste Edouard Loradoux Bellford, dated May 2d, 1853, and specification dated October 26th, 1853, and filed November 2d, 1853.

The plaintiffs' machine is one of great utility. It is not designed for the sawing of logs or of boards from logs, but is designed to saw lumber—that is, boards and planks in the state in which they are found in the market—into thinner lengths. It is generally called a resawing-machine, which indicates the subjecting again to the process of sawing lumber which has been created by sawing. It is an object in a resawing-machine that the kerf or portion of the wood converted into saw-dust by the operation of resawing should be as narrow as possible, in order that the largest possible number of thin boards may be obtained from a thick one. To accomplish this end the only suitable saw is what is called a veneer-saw, or a saw such as is generally used for sawing veneers. A veneer-saw is a circular saw composed of thin plates or segments screwed fast to a central circular flange or stiffening-plate in such a manner that the stiffening-plate protrudes on only one side of the saw, the other side of the saw being a plane. The veneer cut
186 passes off on the side which has the stiffening-plate, while the unsawed part of the wood passes on on the other side.

In the plaintiffs' machine the organization is such that the stiffened veneer-saw can be used, while the stuff can be sawed thin and of a uniform thickness from end to end and the operation be rapidly performed. The saw revolves on a horizontal axis, and the board to be resawed is fed in with its two flat faces standing perpendicular. It is fed by feeding-rollers, which have a yielding pressure to accommodate inequalities in the thickness of the boards. When the machine is running the feeding-rollers on one face of the board are left free to yield, while those on the other face have their yielding feature destroyed. The distance on the unyielding side between the line of the periphery of the rollers and the line of the nearest face of the saw is equal to and determines the thickness of the piece to be sawed off, such two lines being parallel to each other. The feeding-rollers on either face of the board can be made to yield or be fixed so as not to yield at pleasure, the fixed side being the *guage* side or line side determining the thickness of the piece to be sawed off, and the rollers on the other side being set so as to yield to inequalities in the thickness of the board. Thus either side of the saw can be made the line side, as well the stiffened side as the plane side. There is in the machine a provision for holding the board that is being sawed after its rear end has passed beyond the gripe of the feeding-rollers and while a portion of it still remains to be sawed. This arrangement consists of two pressing-instruments, one pressing on each side of the board near the saw and between the feeding-rollers and the saw, and forming a clamp. Each one of these two instruments can be set so as to yield to inequalities in the thickness of the board, and each one can be fixed so as not to yield. In the use of the machine the fixed side of the clamp is on the same side as the fixed side of the rollers and the line side of the saw, and when one side is fixed the other side is left free to yield. The elasticity of each clamping-instrument is independent of the elasticity of the feeding-rollers which are on the same side with it. There-
187 fore when one of the clamping-instruments is set to yield it

can yield in and of itself without reference to the yielding of the feeding-rollers on the same side. Hence a board of one thickness may be pressed between the yielding and the unyielding jaws of the clamp, while a board of a different thickness is being fed and pressed between the yielding and the unyielding rollers. Another feature of the plaintiffs' machine is the use of two deflecting-plates one on each face of the saw. They are thin, stiff plates set in close to the saw face, and operating to relieve the saw from the pressure and friction of the surfaces each side of the cut in the board, and to open the cut and relieve the cutting edge of the saw.

The machine used by the defendants, Frame, Nichols, and Robbins, and which I call the Frame machine, has a circular veneer-saw, composed of segments of thin metal, secured to a central supporting-plate, and a deflecting-plate on each face of the saw. The saw and the plates are substantially the same, in construction and mode of operation, as the saw and the plates in the plaintiffs' machine, and the combination of the saw and the plates is the same in the two machines.

The Frame machine has two pairs of feed-rollers, one pair on each side of the board, each pair being in a frame. The rollers on one side can be set to yield, and, when so set, yield independently of the frame. In the plaintiffs' machine, when yielding is required, the entire frame which contains the pair of rollers yields. But this is only a formal difference. The Frame machine has two pressing-instruments, which together form a clamp. On the same side with the yielding feed-rollers there is a yielding clamping-instrument, which, like the clamping-instruments in the plaintiffs' machine, is a non-rotating piece of metal. Opposite to this, and on the line side or gauge side of the machine, is a fixed, unyielding roller, which forms the other member of the clamp. It is contended, for the defendants that this clamping-arrangement of theirs does not infringe the second claim of the plaintiffs' patent, for the reason that the roller, which forms part of the clamp, is not capable of having any lateral elastic movement, and that the clamp does not
188 hold the stuff at its extreme end, as does the clamp in the plaintiffs' machine. But the Frame machine does hold the stuff by means of an elastic action in the clamp, which elasticity is independent of the feed-rollers, and thereby the machine can and does saw successive boards of varying thickness, one being held by the clamp while the succeeding one is being held by the feed-rollers. To accomplish this, it is not requisite that more than one of the two instruments which form the clamps should be elastic at a given time, or that both of them should be elastic at one and the same time; and, as shown by the description and drawings of the plaintiffs' patent, the roller-bed on the line side is never set so as to be elastic when the machine is running, and, when such roller-bed is made inelastic, the elasticity of the clamping-instrument on the same side is destroyed, so that, in use, but one clamping-instrument at a time is suffered to be elastic. The difference between the Frame machine and the plaintiffs' machine in this respect only measures the inferiority of the former. It has the entire invention and apparatus of the plaintiffs in respect to the clamp, applied, however, to only one side of the machine.

The Frame machine also contains substantially the same arrangement of adjustable bed, clamp, saw, and stiffening-plate, which is found in the plaintiffs' patent, and so combined that the stiffened side of the saw can be made the line side.

The foregoing views apply to the Frame machine of which Exhibit No.
5 is a model. It follows, that it infringes the first, second and fourth

claims of the plaintiffs' patent. The Frame machine, of which Exhibit No. 6 is a model, contains the combination of two deflecting-plates with the saw, which is covered by the first claim of the plaintiffs' patent, and infringes that claim.

The answer in the suit against Dunbar and Hopper sets up the same matters of defence that are set up in the answer in the suit against Frame, Nichols, and Robbins, adding in respect to prior knowledge and use, the name of E. W. Robbins and omitting that of John M. Nichols.

189 The machine used by the defendants, Dunbar and Hopper, has the combination of two deflecting-plates with a circular veneer-saw, which is covered by the first claim of the plaintiffs' patent.

That machine, which I call the Dunbar machine, has four feed-rollers, two on each side of the machine. Two of the four are opposite to each other, and nearer to the saw than the other two are, which latter two are also opposite to each other. It also has two clamping-instruments, which are located, with reference to the saw, substantially in the same place as the two clamping-instruments described and shown in the plaintiffs' patent. One of those clamping-instruments is rigidly attached to the standard which holds one of the two rollers nearest the saw, and the other of such instruments is rigidly attached to the standard which holds the other one of the two rollers nearest the saw. Therefore, neither one of such clamping-instruments can have any lateral elastic movement independent of the roller held by the standard to which it is attached. One, however, of such clamping-instruments has a lateral elastic movement independent of the feed-roller on the same side which is farthest from the saw; and the result of the arrangement is, that inequalities in a board that is being sawed affect independently the lateral elastic action between the clamping-instruments and the lateral elastic action between the two feed-rollers that are farthest from the saw, and two boards of different thicknesses may follow each other through the machine, and one of them be firmly held by the clamp, while the other is firmly held by the two feed-rollers that are farthest from the saw. This is the substance and essence of the invention covered by the second claim of the plaintiffs' patent.

It is objected that the plaintiffs' clamping-instruments have an elasticity independent of the roller-beds to which they are attached; that the clamping-instruments in the Dunbar machine have no elasticity independent of the roller-beds to which they are attached, one of them having an elasticity which is independent only of the roller-beds to which it is not attached; that the second claim of the plaintiffs' patent claims expressly only clamping-instruments which have a lateral elastic movement independent of the roller-beds to which such clamping-in-

190 struments are attached; and that, therefore, the Dunbar machine is, in respect to its clamping-instruments, not an infringement of the second claim of the plaintiffs' patent. But this is too technical a view, and sacrifices substance to shadow. Taking the whole specification, and the statement of the invention, and the description, and the second claim, and reading them together, it is manifest that the arrangement in the Dunbar machine embodies the real invention covered by such second claim, and that there is no violence to the language of that claim in so construing it as to hold it to cover an arrangement in which one of the clamping-instruments has a lateral elastic movement independent of feed-rollers with which it is combined, or in connection with which it is used. The change made in the Dunbar machine is not a substantial change, but is one that would be made by a mechanic seeking to vary form without varying substance, and hoping, while using the invention, to avoid the charge of infringment.

It is also objected that each of the plaintiffs' clamping-instruments has a swinging motion, on a vertical axis, so that they can hold at the same time between themselves two boards of different thicknesses, without reference to any independent elastic action of the roller-beds; and that neither of the clamping-instruments in the Dunbar machine has any such swinging motion on a vertical axis. This feature exists in the plaintiffs' clamping-instruments, and is a useful one, and is absent from the Dunbar machine, but it is not a feature that enters into the second claim of the patent, nor is it a feature that has anything to do with the question of a lateral elastic action in the clamping-instruments independent of a lateral elastic action in some or all of the feeding-instruments.

Nor does the absence from the Dunbar machine of provision for making the clamping-instruments on both sides elastic independently of the elastic action of the feed-rollers farthest from the saw make it any the less an infringement of the second claim of the patent. This question has been already considered in reference to the Frame machine.

191 The Dunbar machine also infringes the fourth claim of the plaintiffs' patent.

In the case against Swift no proofs have been taken on the part of the defendants. The answer sets up prior knowledge and use of the invention by Asa M. Beard, George Hyde, J. B. Graham, R. Dorsett, and H. J. A. Neilson.

The machine used by Swift is made by the Huntington Machine Company of Newark, New Jersey. It has the combination of the saw and the two deflecting-plates of the plaintiffs' patent. The clamping-instrument on the same side with the stiffened or rounded side of the saw is permanently fixed to the roller-bed that is nearest to the saw on that side; that side of the saw is permanently the line side. The clamping-instrument on the other side is permanently fixed to the roller-bed that is nearest to the saw on that side, but has a lateral elastic movement independent of the feed-roller on the same side that is farthest from the saw. In this respect the arrangement is, in substance, the same as in the Dunbar machine. The machine of Swift also infringes the fourth claim of the plaintiffs' patent.

The answer in the case against Peddie sets up the same matters of defence that are set up in the answer in the case against Dunbar and Hopper, omitting, in respect to prior knowledge and use, the names of Whiting, Cook, Metcalf, and Rockwood, and the patent to Andrews and Sproat. The machine used by Peddie is the same in construction as that used by Dunbar and Hopper.

There is no force in the suggestion that the specification of the plaintiffs' patent contemplates the use of any other description of feed than a roller-feed, in connection with an independent elastic action in the clamping-instruments.

The disclaimer of the use of only one deflecting-plate with the saw, and the limitation thereby of the first claim to the use of two deflecting-plates with the saw, was proper, and the disclaimer was in proper form.

There is nothing in the fact that one deflecting-plate is described in the extract from Holtzapffel and in the Andrews and Sproat pat-

192 ent, which affects the novelty of the invention of the use of two deflecting-plates in the plaintiffs' machine. The case is not one of mere duplication. In view of the fact that, in cutting from a block, as in the Andrews and Sproat patent, and from a log, as in the machine described in the extract from Holtzapffel, but one deflector is required,

or could be used, and that the plaintiffs substituted for the carriage-feed, before used with one deflector, a roller-feed, in the use of which, in a machine for resawing boards, the saw is exposed to friction on both sides of it, so as to require a deflection of the board on both sides of the saw at the same time, the introduction of deflecting-plates on both sides of the saw, so as to render practical the resawing of boards by a circular saw with a roller-feed, must be regarded as a substantial invention, notwithstanding one deflecting-plate had been used in a machine for sawing from the log or block without a roller-feed. The Andrews and Sproat patent, containing the one deflecting-plate, was granted in 1839. Yet Crosby, in his patent of 1851, introducing devices to relieve the saw on both sides at once, did not hit on the idea of putting in two deflecting-plates. The use of them was not obvious in such a machine as the plaintiffs'.

The prior use by Doncaster of the two deflecting-plates with the saw is not established; and the evidence shows that Myers and Eunson made the invention before it was made by Doncaster or any one connected with him.

The English patent to Bellford and the Crosby patent of 1851 are the same. Neither of them contains any clamping-instrument which has a lateral elastic movement independent of any feed-roller bed in the machine. The machine which they describe would not allow one board to be held by a clamp while a board of greater or less thickness was being held and fed by feed-rollers.

There is nothing in the Crosby patent of 1841 to affect the novelty of the plaintiffs' patent. No evidence was given as to any other prior use or knowledge that is set up in any of the answers, nor was the novelty of the fourth claim of the plaintiffs' patent attacked.

In the case against Dunbar and Hopper, and in the case against Swift, the plaintiffs are entitled to a decree for a perpetual injunc-
193 tion and for an account of profits, based on an infringement of the first, second, and fourth claims of their patent, but without costs, as the disclaimer in respect to the first claim was not filed prior to the bringing of the suits.

In the suit against Frame, Nichols, and Robbins, Margaret Myers and Eugene Eunson are merely nominal plaintiffs. The plaintiffs Peek and Bogert are the owners of the entire right for the territory within which the infringement in that case took place. They have not disclaimed the claim to the use of one deflecting-plate with the saw. That claim is anticipated by the Andrews and Sproat patent. There is no evidence that Peek and Bogert have unreasonably neglected to disclaim, nor is any such defence set up in the answer. Unless such disclaimer be made, there can be no decree for the plaintiffs. An opportunity will be allowed to Peek and Bogert to make such disclaimer and present to the court evidence of its having been made. When such evidence shall have been presented a decree will be entered for a perpetual injunction and an account of profits against Frame, Nichols, and Robbins in respect of the first, second, and fourth claims of the patent, but without costs.

The same course must be taken in respect to the suit against Peddie. Lagowitz is a joint owner with Eugene S. Eunson of the right to the patent for the State of New Jersey, where the infringement complained of in that suit took place. Eunson's disclaimer operates only to the extent of his interest, and does not cover the interest of Lagowitz.

Frederic H. Betts for the plaintiffs; Charles M. Keller and Charles F. Blake for the defendants Frame, Nichols, and Robbins, and Dunbar and

Hopper; Jonathan Marshall, for the defendant Swift; Miller & Peckham for the defendant Peddie.

194 At a stated term of the circuit court of the United States for the southern district of New York, held at the court-house, in the city of New York, on the 29th day of May, 1871:

Present, Hon. Samuel Blatchford, district judge.

MARGARET MYERS, EXECUTRIX OF JOHN MYERS, deceased, and Eugene S. Eunson,
vs.
JOHN DUNBAR AND JEREMIAH HOPPER.

This cause came on to be heard at this term and was argued by counsel, and thereupon, on consideration, thereof it was ordered, adjudged and decreed:

That prior to the 23d day of May, 1854, John Myers and Robert G. Eunson were the first true and original inventors and discoverers of a certain new and useful invention, to wit, "and improved machine for sawing thin boards, &c.," and that letters-patent of the United

195 States were duly issued to them in due form of law for said invention on the 23d day of May, 1854, and numbered 10965.

That said letters patent were duly extended for the term of seven years from the 23d day of May, 1868.

That the said John Myers has since deceased, and the said Margaret Myers is the executrix of said John Myers, deceased.

That on the 20th day of May, 1868, the said Robert G. Eunson, assigned to Eugene S. Eunson all his interest in said letters-patent and all damages for infringing the same.

That said complainants are the joint and exclusive owners of said letters-patent, and entitled to the exclusive use of the invention therein claimed within and for the whole of the United States, save only the State of New Jersey, the city and county of Philadelphia, and all that portion of the city of New York lying west of Broadway and Eighth avenue.

That said complainants have duly filed a disclaimer to part of the first claim of said letters-patent, and said disclaimer is valid and operative.

That the defendants, John Dunbar and Jeremiah Hopper, have

196 infringed the first, second, and fourth claims of said letters-patent, by making or causing to be made, and by using and causing to be used, a certain resawing-machine, having a circular veneer-saw, combined with two deflecting-plates, one placed at each side of the saw, substantially as described and shown in said letters-patent; and also having four feed-rollers, two of said rollers being opposite to each other, and nearer to the saw than the other two, which are also opposite each other; and having also two clamping-instruments, located substantially in the place shown in said letters-patent, one of said clamping-instruments being rigidly attached to the standard which holds one of the two rollers nearest the saw, and the other of such instruments being rigidly attached to the standard which holds the other one of the two rollers nearest the saw, one, however, of such clamping-instruments having a lateral elastic movement independent of the feed-roller on the same side which is farthest from the saw, said side being the line side, and neither of said clamps having any swinging motion on a vertical axis.

197 That said complainants are entitled to a perpetual injunction, enjoining and restraining said defendants, and each of them, from

making, or causing to be made, using or causing to be used, or vending to others to be used, the said resawing-machine or any machine infringing upon said letters-patent, or said first, second, or fourth claims thereof, to wit:

1st. The employment or use of the deflecting-plates both placed at the sides of the saw, as therein shown, for the purpose of preventing the sawed stuff from bearing against the sides of the saw, and expanding the saw-kerf, and also for the purpose of allowing a thin veneer-saw to be stiffened by plates, one or two, as desired.

2nd. The employment or use of the clamps, arranged as therein shown, or in an equivalent way, so as to have a lateral elastic movement independent of the roller-beds, to which said clamps are attached, for the purpose of compensating for the varying thickness of different pieces of stuff and keeping them in a proper relative position to the saw.

4th. The employment of an adjustable bed with clamps, as
198 described, in combination with the saw, when the saw has a stiffening-plate in line with said bed by which the stiffened or rounded side of the saw is made the line side.

That the complainants are also entitled to an account of the profits derived by the defendants from the infringements aforesaid, and that it be referred to Joseph Gutman, jr., a master of this court, to take and state such account, and report thereon with all convenient speed.

That all further directions be reserved until the coming in of the master's report.

(Signed) SAM'L BLATCHFORD.

This decree may be filed.
May 29, 1871.

KELLER & BLAKE.

(Endorsed:) Circuit court of the United States, southern district of New York. Margaret Myers, executrix of John Myers, deceased, and Eugene S. Eunson *vs.* John Dunbar & Jeremiah Hopper. Decree. Matthews & Betts, complts.' solrs. Filed May 29, 1871.

199 Circuit court of the United States for the southern district of New York.

MARGARET MYERS, EX., &C.
vs.
JOHN DUNBAR, ET AL.

It is hereby consented that Whitney and Betts be substituted as attorneys and solicitors for the complainants herein, and that an order to that effect be entered.

Dated May 10, 1872.

FREDERICK H. BETTS.
MATHEWS & BETTS.

Circuit court of the United States for the southern district of New York.

MARGARET MYERS, EX'X, &C.
vs.
JOHN DUNBAR ET AL.

On reading and filing the above consent, ordered that Whitney &

Betts be, and they hereby are, substituted as attorneys and solicitors for the herein.

Dated May 10, 1872.

200 (Endorsed:) U. S. circuit court, southern dist. of New York. Margaret Myers, ex'x, &c., *vs.* John Dunbar et al. Consent & order for substitution of solicitors. Whitney & Betts, complts' solicitors, 20 Nassau st., N. Y. Filed June 19, 1872.

201 EVIDENCE FOR COMPLAINANTS, &c.

Circuit court of the U. S. for the southern district of New York. In equity.

MARGARET MYERS, EXECUTRIX OF JOHN MYERS, deceased, and Eugene S. Eunson,
against
JOHN DUNBAR AND JEREMIAH HOPPER.

Testimony under final decree, for accounting, before Joseph Gutman, jr., master.

NEW YORK, *June* 5, 1871—2 p. m.

Present, Mr. Betts, complainants' solicitor.

At the request of Mr. Blake, defendants' solicitor, the hearing is adjourned to June 8, 1871, at 2 p. m.

NEW YORK, *June* 8, 1871—2 p. m.

Present, Mr. Betts, counsel for complainant', and Mr. Glassey, counsel for defendants.

Mr. Betts puts in evidence copy of the decision. It is marked Exhibit A.

202 JOHN DUNBAR, one of the defendants, having been by me first duly sworn, and being examined by Mr. Betts, deposes and says:

The books I now produce contain statements of the amount of resawing done by me on this saw in this suit. (They are marked Exhibits B and C.) The entries were made in these books at the time the sawing was done. The numbers opposite the dates are the number of thousand feet on the first page, down to and including October, 1863. The numbers mean the number of thousands of feet resaved. After that the numbers in the first column indicate the number of thousands of feet, and the other figures are the prices which show, as far as I knew them, the market-prices for resawing at those times. We made the statements in the book for the purpose of knowing the amount of resawing done every month. These figures of dollars and cents were not charged over to any other book. The object of keeping them in dollars and cents on this book was simply to show what our resawing amounted to in market-value, as near as we could get it. We used to charge, as a general thing, $3 for a thousand feet sawed. When we figured up the cost of the lumber, we charged generally at that rate in making charge for boxes. The figures in the book indicate, as near as I can tell, the market-rates for resawing. It was generally at the rate of $3 per thousand feet.

I have here a statement of our expenses of running the saw. I produced it. It is put in evidence, and marked Exhibits D, J. G., Jr.

203 EXHIBIT D, J. G., JR.,—*Cost of running a circular-saw one year.*

One saw'er	$1,300 00
Two laborers	500 00
Rent	1,000 00
Eight horse-power, $9.50*c*	1,200 00
Oil	4 00
Repairing saw-mill	25 00
Belting	10 00
Segments	68 00
" grinding	15 00
Interest on saw	63 00
Depreciation	45 00
Insurance	36 00
	$4,266 00

Witness is ordered to produce his cash-book, and any other books from which he makes his estimate of expenses.

Examination adjourned to June 12, 1871, at 2 p. m.

June 12, 1871—1 p. m.

Examination further adjourned for new notice.

JOSEPH GUTMAN, JR.,
Master.

NEW YORK, *June* 25, 1872—1.30 p. m.

Present, Mr. Betts, counsel for complainants, and Mr. Glassey, counsel for defendants.

The witness John Dunbar being further examined, deposes and says:

204 I cannot produce any more books, papers, and vouchers than I have heretofore produced. I have none here with me pursuant to requirement of summons. We keep an account of our expenditures, but not of this saw. We keep a cash-book, and a day-book, and ledger. Our expenses we enter in cash-book. There is no other book but cash-book which contains our expenditures. We keep rent-account and labor-amounts in cash. We keep, also, a labor-book separate from cash-book. Insurance, repairs, fuel, are kept in cash-book.

(Defendant is ordered to produce all of his cash and labor books.)

I have been in business of box-making since May, 1857.

We commenced to do business in 1857, at 144 Banks street. We used no machine for resawing lumber at that place. We remained there I think two or three years. We moved to 39 Bethune street from there. I don't remember the year; it was in the spring. We remained in Bethune street until 1863, I think. We used no resawing-machine in Bethune street. The first resawing-machine we used was one we bought from Huntingdon; it was not the exact one complained of; it was much the same. We continued to use that first one for a while; then we got one with a larger flange and larger saw, the same frame. We never had more than one of these saws; purchased it directly from Ruff & Huntingdon; the Huntingdon machine works. Have no book with me showing the expenses.

Adjourned to June 26, 1872, at 1 p. m.

NEW YORK, *June* 26, 1872—1 p. m.

Present, Mr. Betts. After waiting until 2 p. m. for Mr. Glassey, he not arriving,

205 Examination of witness Dunbar was resumed by Mr. Betts.

I have, to-day, brought with me my cash and labor books. (They are offered in evidence by Mr. Betts, and marked Exhibits E, F, G, H, I, J, K, and L.)

We carried, also, on the box business during the period we used this saw, as well as doing resawing, box, and lumber business.

In making the boxes, some of the lumber *business* does not require resawing; some does. In that part of the lumber that requires to be resawed, the first thing we do is to plane the lumber, if required; the next is to resaw the lumber, and the next to cut it into pieces of the size for the boxes. The next nailing the pieces together, and the next selling them. We had two planers, two resawing machines, one being a circular, and the other an up-and-down saw. We have three up-saws, three cross-cut saws, and one independent rip-saw. We have three tonguing and grooving machines. That is about all the machinery, excepting a grindstone. We have also got a machine for making sliding-cover boxes, for putting grooves in the sides of boxes for sliding-covers; also a saw for cutting kindling-wood. All this machinery is in our building, Nos. 124 and 126 Worth street. The making of the boxes is carried on in the same building. Our lumber-yard is at foot of West Twentieth street. Since July, 1863, we have occupied the whole of the building 124 and 126 Worth street.

The payment of rent of quarter in 1863, appears on page 71 of book Exhibit L. Two items, of $125 each, to N. P. Bailey and A. Fenley.

Our lease was for 21 years, at $1,000 per year, taxes and assess-

206 ments, and the buildings to remain at that expiration of the lease. We put up the buildings. By the terms of the lease the building was to cost not less than $5,000. The cost was somewhere in that neighborhood. It was put up in 1863. It might have cost more. The ground-rent we have paid ever since at the rate stated—$1,000 per year.

We paid the taxes as follows: I cannot give the exact amount. I will produce the tax-bills at the next hearing. I think I have them all.

I have kept no separate account of the cost of running this saw in question. It is intermingled with the other expenses of the business. I suppose I could pick out the items of the cost of running this saw from the books, if I took time to do it. We run our own engine; do not hire power. We burn shavings, sawdust, blocks, &c.; use refuse of the shop for fuel. All our machines are run from one engine. To run that engine we employ an engineer and a boy. We have had a number of engineers. The last one we had is dead. I think James Kelly was the engineer we employed in 1863. We paid him $12 per week, I think; I cannot tell how long Kelly continued there. We pay a man now $20 per week. $12 a week is not what we usually paid. We paid Kelly more, subsequently, sometimes $15, sometimes $16.50 per week. Kelly continues to December, 1866, in the books, at various wages. The next engineer was Nelson Beebe; he is dead. Kelly continued to April 27, 1867. Then Nelson Beebe commenced; he continued until he died. He continued till September 4, 1869. Our next engineer was George Stitcher, from September 11, 1869, to April 30, 1870. James Hughes succeeded him, and continued till October 1, 1870. He was succeeded by Andrew Kessimen, who continued until 1872. We have now George Stitcher again. We paid the boy $5 or $6 per week.

The other expenses of running the engine were the wear and
207 tear—repairs. I don't know that I could point out these in the cash-book. There were many incidentals. I could not say the exact expense of putting in the engine—somewhere, I should say, in the neighborhood of $2,500. I think, Roff & Huntingdon furnished us with the whole machinery; not the belting. They did the engine and boiler, saws, &c. Our engine is, I think, forty-five horse-power boiler, and the engine, I think, twenty-five. We use all our power. I cannot tell the power required to run our machines respectively. I could not state what it cost for repairs. I think I could dig it out of the books.

Andrew Phillips has been our sawyer from the first. He has no other duty that I know of except to attend to that saw. I do not know how much of the time our saw was running. I believe there are one or two men connected with the saw. Phillips can tell all about this best. Roff & Huntingdon used to do all our general repairs, and I do not think that I could pick out the special items of repairing for the engine, or any particular machine or saw. We make no discrimination in the books of the repairs.

We keep the whole of our machinery insured. I could not tell for how much without looking at the policies. I think our insurance agent could tell. J. V. N. Smith is our insurance agent. I think we carry from $15,000 to $16,000 insurance. We value our machinery and buildings at about $20,000.

In our cash-books we keep entries of all our receipts of the whole business.

I read from cash-book Exhibit L, commencing July, 1863, monthly receipts:

208	July	1,316 26
	August	3,026 81
	September	2,188 04
	October	5,657 79
	November	5,613 00
	December	6,630 60
1864.	January	6,044 97
	February	4,645 44
	March	4,201 23
	April	5,723 00
	May	9,594 63
	June	6,680 16
	July	9,185 10
	August	6,781 50
	September	8,166 37
	October	5,944 58
	November	7,977 38
	December	8,224 40
1865.	January	7,604 37
	February	7,487 14
	March	8,370 22
	April	10,812 22
	May	8,037 38
	June	4,168 34
	July	5,066 20
	August	6,635 48

	September	9,419 18
	October	7,691 25
	November	8,903 83
	December	8,908 09
1866.	January	4,543 77
	February	7,392 46
	March	7,783 05
	April	9,055 52
	May	8,467 40
209	June	8,406 11
	July	5,651 95
	August	5,153 10
	September	11,897 79
	October	11,379 90
	November	9,776 33
	December	10,273 45

From Exhibit K, I read, monthly receipts:

1867.	January	5,222 88
	February	5,120 23
	March	6,378 49
	April	8,869 23
	May	7,873 39
	June	5,668 87
	July	7,132 79
	August	5,194 16
	September	10,485 49
	October	11,639 97
	November	8,626 21
	December	7,070 31
1868.	January	3,879 20
	February	8,314 98
	March	8,894 63
	April	9,082 79
	May	8,219 13
	June	7,694 62
	July	6,042 46
	August	7,294 52
	September	7,429 61
	October	12,417 25
	November	9,254 67
	December	8,104 63
1869.	January	6,862 42
	February	7,717 20
210	March	7,658 20
	April	7,063 00
	May	6,696 61
	June	5,359 59
	July	5,252 81
	August	6,302 62
	September	9,871 41
	October	14,098 55
	November	9,622 57
	December	9,240 86

1870.	January	3,266 94
	February	6,910 67
	March	7,969 57
	April	9,378 19
	May	7,328 68
	June	7,366 73
	July	613 50
	August	8,548 41
	September	12,016 67
	October	12,345 75
	November	11,269 76
	December	10,227 84
1871.	January	6,288 30
	February	6,209 20
	March	14,722 96
	April	11,117 38
	May	6,475 52
	June	9,240 30
	July	7,937 66
	August	8,847 46
	September	10,854 92
	October	13,538 37
	November	8,320 84
	December	10,371 20

211 In book Exhibit C, I cannot tell why some amounts are made up in the way indicated there—they are in Mr. Hopper's handwriting; he and Phillips made it up; I presume the account of resawing was made up and handed in when done. Mr. Phillips would know all about it.

(Order made that tax and assessment bills be produced at next meeting by the witness. Also a statement in detail of all items entered in the books for repairs on machinery and engine, belting, segments of saw and grinding saw, with reference to dates and amounts. Also, the lease of the premises. Also any book containing entries of sawing done after June, 1870, on the machine in question.)

Adjourned to July 8, 1872, at 12 a. m.

N. Y., *July* 8, 1872.—12 a. m.

Present, Mr. Betts, counsel for complainant, and Mr. Glassey, counsel for respondents.

Examination of the witness Dunbar resumed by Mr. Betts.

I have here the leases of our premises in Worth street.

(Lease from Thomas Ward to defendants Dunbar and Hopper, of premises No. 126 Worth street, for 21 years and 3 months from Jan'y 31, 1863, offered in evidence, at rent of $500 per annum and payment of taxes, duties, assessments and water-rent, and containing a provis-
212 ion that the buildings and permanent improvements shall become the property of the lessor, exclusive of machinery and removable fixtures, and with a covenant on the part of the lessees that permanent improvements should be made to the amount of $2,500.)

(Also lease from Barley to same parties of premises 124 Worth street, with same provisions, and on same terms, made on same date for same period.)

(It is agreed by counsel for both parties, that the above statement shall be received in evidence in lieu of annexing the original papers.)

I have produced tax and assessment bills, and water-rent bills so far as I could find them. They are as follows:

Tax bill of 1862	$90 66
Tax bill of 1863	102 75
Tax bill of 1864	216 00
Tax bill of 1865	308 64
Tax bill of 1866	253 00
Water-rate for 1863, pd. Aug. 21, '63	174 05
" " 1864, pd. June 30, '64	203 50
" " 1865, pd. July 31, '65	203 50
" " 1866, pd. July 31, '66	203 50
" " 1867, pd. Sept. 26, '67	204 30
" " 1868, pd. Oct. 31, '68	204 30
" " 1869, pd. Nov. 5, '69	205 90
" " 1870, pd. Nov. 2, '70, to May 1, '71	205 90
Assessment, pd. Feb. 28, 1867	219 41
" " Dec. 20, 1866	51 83
" " July 8, 1867	7 45
" " July 8, 1867	7 45

There are no others that I know of now; there may be some that I have not found.

213 (It is consented by counsel that the above statement shall be received in evidence in lieu of the original bills.)

Q. Have you also produced, as ordered at the last meeting, a statement in detail of all items entered in the book, for repairs on machinery and engine, belting, segments of saw, and grinding of saw, with reference to dates and amounts?

A. Yes, sir; to the best of my knowledge; this paper is a statement of the expense of repairs, &c., so far as I could get at it; it also includes items of rent, Croton water, and many other things.

Q. Point out on this account all items which relate to any expense for running engine.

A. July 3, 1863, rubber, oil, &c., $6.05; that applies to engine and machinery.

J. W. Griffiths, belts, $8.25, July 11, 1863.

Robert Taggart, July 11, 1863, $31.00 for plumbing.

July 17, 1863,	Huntingdon Machine Co	$	2 04
" 18, "	Hugh McGovern, coal		15 00
" 22, "	" " "		10 00
" 23, "	White lead		4 20
" 25, "	Jno. Crow, painting		70 00
" 25, "	White lead		3 00
" 28, "	A. R. Bass, coal		35 25
" 29, "	Manhattan Oil Co., oil		5 50
Aug. 1, "	Robert Taggart, plumbing		10 00
" 5, "	Fetch & Smith, plumbing, or iron-work		10 00
" 5, "	Chester, Clark & Co., composition		4 50
" 8, "	Robert Taggart, plumbing		15 00
" 13, "	Fletcher & Smith, plumbing, or iron-work		51 00
214 " 17, "	J. W. Griffiths & Co., belting		145 93
" 18, "	H. M. Govern, coal		10 00
" 18, "	Files		1 98

Sep. 4,	"	A. R. Bass, coal	91 64
" 8,	"	Files	3 59
" 10,	"	Hooks for belting	4 96
" 19,	"	H. R. Warner, saws, or something relating to saws	20 00
" 23,	"	N. Y. Gas Co	10 00
" 26,	"	Flue brush	2 60

Examination of Mr. Dunbar suspended to enable him to make up account as required.

ANDREW PHILLIPS, called by Mr. Betts, and having been duly sworn, on being examined by Mr. Betts, deposes and says:

To run a planer such as we have requires a 4-inch belt; 4-horse power would drive our planers; one might require a 6-horse power.

To run the up-and-down saw would require 6-horse power; so I have heard; to drive our rip-saws I cannot tell exactly how much power was required; it depends on the thickness of the stuff; I should say it would require about 5-horse power to run the three rip-saws. Also, about 5-horse power for the three cross-cut saws; for the three tongueing and grooving machines about 1-horse power would do. We seldom run the sliding-cover machine. For the circular resawing machine about 10 to 15-horse power would be required to run it properly; I suppose we generally used from 10 to 12-horse power to run it. The cylinder of the engine is 13¼-inch bore, 30-inch stroke; it is supposed to be a 30-horse power engine; that is what the
215 builder told me. The engine makes 50 revolutions per minute, and when the circular saw is on, we have to have 80 pounds of steam; when the circular saw is running we take 80 pounds of steam, which is all we are allowed to carry; when it is off, we run with 50 to 55 lbs.; the engine-house is in the main building; the engine occupies a room, I should think, 18 feet long and 12 feet wide, I should think; may be more or less. The whole building occupies two lots, I should judge they were 75 feet deep; they are three stories high; on the first floor there are 4 rip-saws, 3 cross-cut saws, two matching-machines, one upright saw, and the large circular saw; on the second floor, one matching-machine; the engine-room is in the cellar, and the office is on the first floor; the shafting is in the cellar; the circular saw occupies a space of 32 feet long, and about 8 feet wide; I require that much room to resaw the lumber; on the third floor is a little grooving machine, and dry-goods boxes; the second floor is used for putting the boxes together, for making them; none of that is done on the third floor. I am the sawyer for John Dunbar & Co., and have been ever since they have been in Worth street.

(Cross-examination of this witness reserved.)

ANDREW PHILLIPS.

Examination adjourned to July 15, 1872, at 12 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *July* 15, 1872, at 12 a. m.

Present, Mr. Betts, counsel for the complainants and the witness.

Examination further adjourned at request of Mr. Glassy, counsel for defendant, to August 16, 1872, at 12 a. m.

JOSEPH GUTMAN, JR.,
Master.

216 N. Y., *Aug.* 16, 1872—12 a. m.

Examination further adjourned to August 28, 1872, at 12 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *Aug.* 28, 1872, at 12 a. m.

Examination further adjourned to August 31, 1872, at 12 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *August* 31, 1872—12 a. m.

Present, defendant and his counsel.

Examination further adjourned to Sept. 6, 1872, at 12 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *Sept.* 6, 1872—12 a. m.

Examination further adjourned to Sept. 10, 1872, at 11 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *Sept.* 10, 1872—11 a. m.

Present, counsel for therespective parties.

Examination of witness, JOHN DUNBAR, resumed by Mr. Betts.

Q. Have you produced to-day an account of the expenses of running your engine separate and apart from the other expenses of your establishment, as requested at the last meeting? If not, why not?

A. I have to the best of my knowledge and ability; I have not produced an account separate and apart from the other expenses.

Q. Can you give any estimate of the expense of running your
217 engine separate and apart from all the other expenses of your establishment, excluding wages for running the engine?

A. I don't think I can.

JOHN DUNBAR.

Subscribed and sworn to this 10th day of Sept., 1872.

JOSEPH GUTMAN, JR.,
Master, &c.

(Counsel for complainants offers in evidence all of the testimony and evidence taken on the trial prior to the hearing. Printed copies, marked "right of objection reserved for Mr. Glassey, defendant's counsel." They are marked Exhibits "X" and "Y.")

And the said witness, JOHN DUNBAR, being cross-examined by Mr. Glassey, counsel for defendant, deposes and says:

I have prepared an account of the moneys expended by my firm on machinery during the time covered by this accounting. The account shown me by you is the account.

(Mr. Glassey offers the account in evidence. It is marked "Exhibit 1, defdt." This account was made up from the cash-book. All the items do not refer to the machinery; there are some items for rent, insurance, and taxes.

It is stipulated that the printed copies, evidence, &c., marked "X" and "Y," may be used before the master on this hearing in lieu of the originals on file, errors and omissions *and* excepted.)

Examination adjourned for defendants to Sept. 16, 1872, at 11 a. m. Adjournment to be at deft.' expenses.

218 EVIDENCE IN REBUTTAL.

ROBERT G. EUNSON, produced as a witness on the part of the complainants, having been duly sworn and examined by Mr. Betts, says:

I am one of the inventors of the Myers & Eunson sawing-machine. I was examined in the case prior to the hearing. I am familiar with wood-working machinery, and have been so more or less for 30 years. I don't know that there was much machinery for resawing as far back as 30 years; the first machinery for resawing that I was familiar with was the Crosby resawing-machine—reciprocating up-and-down saw; I have been familiar to a greater or less extent with the resawing-machines used since. I have traveled over the greater part of the important places of the State of New York, Pennsylvania, Ohio, Michigan, Milwaukee, Chicago, St. Louis, Indianapolis, Louisville, Cincinnati, to examine resawing-machines; I may add New Jersey; I have practically run resawing-machinery; our own machine, principally, except the common bench-saw; I have seen resawing-machines made by other manufacturers run; I have seen the saws made by Dancaster, of Albany; the Huntington Machine-Works of Newark; by Smith, of New Jersey; by Tompkins, of Rochester; by Cornell, Gleason & Graham, of the same place; by Ball & Co., of Worcester, Mass., by Walker of Chicago; by Lee & Leavitt, of Cincinnati; I have seen other machines, by whom made I don't know; by Fay & Co., of Cincinnati, also. I have merely glanced at the patent of Throckmorton, referred to in the deposition of Mr. Renwick, since I have been in this room, at this time; not sufficiently to give a description; I did see Throckmorton's drawings at the time he purchased from us the right to run a machine in Bank st., N. Y.

Q. Was Throckmorton a license' of yours under your patent?

219 (Objected to as immaterial. Ruled out until foundation made.)

Q. Did you ever know of the existence in the market of any such machine as that shown in the drawings of the Throckmorton patent?

(Objected to as before, as immaterial and incompetent; objection overruled; ex'n.)

A. No; I may add that all the knowledge I have of such a machine having existed is from hearsay.

Q. Prior to the 1st of June, 1871, was there any circular resawing-machine known in the market which operated without two deflecting-plates, placed one on each side of the saw?

(Objected to as incompetent, immaterial, and not rebutting question; admitted; exception.)

A. Not on a segment-saw, so far as I know; I think there may have been some solid circulars.)

Q. Were the solid circulars that you refer to machines for doing resawing business, or cutting siding? Give their dimensions.

A. Cutting siding mostly; small saws, varying in dimensions.

Q. Prior to June, 1871, was there any practicable mode of running a segment resawing-machine without two deflecting-plates?

(Objected to; admitted; ex'n.)

A. Not to my knowledge.

Q. Have you examined the resawing-machine now run by the defendants, John Dunbar & Co.? If so, state whether it is the same machine that was run prior *or* to the decree in this cause.

(Objected to as irrelevant; admitted; exception.)

A. It is not the same machine; it is an entirely new machine, with the exception, I understand, of the flange.

Q. State what the dimensions of the segments or saw-plates on that saw are now.

(Same objection, and further that the time should be fixed; admitted; exception.)

A. They are eighteen-inch segments.

220 Q. State whether or not the use of eighteen-inch segments has any effect in relieving the saw from friction on its two sides?

(Objected to as incompetent, immaterialand not rebutting. Admitted; exception.)

A. It has a very great effect in that direction.

Q. Please state how long 18-inch segments have been used on sawing-machines, and who first orignated them.

A. The first segments of that size, that were used to my knowledge were invented by myself and put on a saw that was made by the Huntington Machine Works, the same place where Mr. Dunbar's machine was made for Smith & Harris, of Philadelphia. I do not know the precise time when that machine went into operation, but think it was in the early part of the year 1871; their mill had been burned down, and I do not know the date when it was started; the machine was made from a drawing furnished by myself, in which a section of the saw itself, showing eighteen-inch plates, and which was given to Roff & Huntingdon from which to make the same; only one other machine having eighteen-inch plates, besides the Dunbar machine, has been made to my knowledge, which machine was sent to Cleveland, Ohio, in the fall of 1871, I think.

Q. How about the Brooklyn machine—Hamilton's machine?

A. That has 15-inch plates.

Q. Have you seen the machine of Melanchton F. Schureman run?

A. I have.

Q. State what devices that has for keeping the stuff from the sides of the saw?

A. That is a solid-plate saw with two thin collars, and uses one deflecting-plate and a large spreader behind.

Q. What kind of teeth has it got, and what effect does it have?

(Objected to as immaterial; Q. admitted; exception.)

221 A. The saw has inserted teeth; the teeth are swaged, I believe; the effect is to clear the sides of the saw very well.

Q. Have you seen the machine run by James Hamilton at Mr. Osborn's establishment, corner of Baltic and Columbia streets, Brooklyn?

A. I have; on Saturday last.

Q. State what was the character of the work done by that machine?

A. I saw a lot of lumber lying beside the saw; the pile was 29 boards high and 3 boards wide; out of the front row, which was 29 boards high, 6 boards out of the 29 the saw had been run into the board, varying from an eighth to a quarter of an inch; it had been necessary in each case to back the boards out of the saw and commence the kerf anew; at least one of the boards had been spoiled for over 2 feet of its length; 4 more boards had been sawed crooked, but had not been backed out; 18 inches of each of the four *was* seriously damaged; about one-third of the whole front row of twenty-nine boards was very irregularly sawn; too much so to be merchantable in my judgment. Mr. Hamilton stopped his saw when he saw me examining his work; I placed my hands on the flange, which was hot enough to burn me; the plates of the saw were

hot more than half their length. The machine had a deflecting-plate on the flat side of the saw, and one clamp on the rounding side.

Q. Did that machine have a spreader?

(Objected to as irrelevent; admitted, to exam'r.)

A. I have; I obtained three pieces of wood; one ten inches wide, one-quarter and one-sixteenth (1 5-16) thick; one piece twelve inches wide and one and one-half inches thick; one piece twelve inches wide and two inches thick; I had these cut into by the Myers & Eun-
222 son saw, at 28th street, a distance of about two feet, and weighed the force necessary to open the kerf to the same extent that it would have been opened by the Dunbar machine if being sawed on it. I found by measurement that the thickness of the flange of the Dunbar machine where it comes in contact with the board, was one-half an inch from the root of the plate and eleven-sixteenths from the same side of the plate at the teeth, the plates bevel. The weight was suspended at the same distance from the end of the kerf that the highest part of the flange is distant from the teeth in the Dunbar machine. The point of suspension was close to the lower edge of the board. In the first-mentioned piece, the thickness of the bent part of the board was a scant five-eight's; the amount of weight necessary to bend that board, eleven-sixteenths of an inch at that point, was forty-seven and three-quarter pounds; the opening on the other side of the board being, I think, one-quarter of an inch. The quality of that board was soft pine, rather cross-grained, easier than the average to deflect.

The second or twelve-inch, one and one-half inch thick piece; the piece bent, that is, on the lower side of the kerf, being three-quarters of an inch thick, the weight being suspended as before described, required ninety-four pounds to deflect it eleven-sixteenths of an inch; the opening on the other side of the board at right angles being one-quarter of an inch. The quality of this board was soft pine, but stra'ght grain.

The third piece, twelve inches wide, two inches thick, the lower end being one-eight' and one-sixteenth or 1 5-16 of an inch thick, the weight being suspended in the same way, required one hundred and seventy-seven pounds to deflect it 11-16 of an inch; the quality of this piece was strong wood, with straight grain. These pieces were taken promiscuously, without any reference to the quality of the wood.

Q. Have you seen the Dunbar machine run recently?

A. Yes, sir; this new machine.

223 Q. Did it have any clamping instruments distinct from the feed-rollers?

(Objected to as not material; Q. admitted; ex'n.)

A. No, sir; but there were places for putting them.

Q. Now state whether or not you noticed in the operation of the machine any results from the absence of the curved clamps which were upon the machine previous to the decree.

(Objected to as incompetent; ruled out.)

Q. Did you see the machine in operation before the decree?

Examination adjourned to Oct. 22, 1872, at 12 *a.* m.

N. Y., *Oct.* 22, 1872, 12 *a.* m.

Present, Mr. Betts, counsel for complainants, and Mr. Glassey, counsel for defendants.

Examination of witness Eunson resumed:

Q. On your last examination you stated that you had seen the Dunbar machine operate before the decree in this case, when it was provided with

curved clamps, and also since the decree had seen his present machine operate, which had only the two pair of rollers. Now, please state whether there was any device or arrangement of the machine now used for the purpose of obviating the difficulties arising from the absence of the curved clamps?

(Objected to as irrelevant and incompetent and not rebutting; question allowed; exception.)

A. I observed that the saw is placed nearer the rollers in the present machine, being only about two inches back of the front line of the rollers. There is also provision made for moving the saw up to the rollers as the plates wear away. The rollers themselves are smaller in diameter, being about 4 inches, which brings the centre within 4 inches of the teeth of the saw at the nearest point. That has the effect of presenting the board to the saw held firmly nearer to the cutting-edge than in the old machine.

224 Q. Now, please state whether you noticed any ill effects from the absence of curved clamps in the present Dunbar machine?

(Objected to as above; admitted; exception.)

A. I observed one board six inches wide that had been fed above the bed-line lower guide knocked down by the saw and broken, which would have been prevented by clamps.

Q. How many boards did you see sawn at that time?

A. I did not count them, neither did I count the time that I witnessed the sawing operation.

Q. State as nearly as you can.

A. It would only be a guess, and I feel a reluctance to guessing in the case.

Q. In your last examination you gave the results of certain experiments you had made with reference to the pressing force of certain boards under the conditions to which they are subjected while being resawn. Please state any other experiments you have made on the same subject?

(Objected to as incompetent, immaterial, and not rebutting; admitted; exception.)

A. In reading over my testimony this morning I observed that the distance of the point of suspension of the weight from the end of the kerf was omitted. The distance was 18 inches. I made further experiments with the 10-inch 1 5-16 board, and with the 12-inch 1½ thick board. In the former I suspended the weight 3 inches up from the edge, and 15 inches from the end of the kerf. I found that it required 91 pounds to bend the board 11-16 of an inch. I then suspended the weight at 12 inches from the end of the kerf, and 3 inches up from the edge, and it required 104 pounds to bend the board ½ an inch. The experiment on the 12-inch board, 1½ inches thick, having been cut as described in the first experiment, the weight suspended at 15 inches from the end of the kerf required a weight of 204 pounds to bend the board 11-16 of an inch scant. I then suspended the weight at 12 inches from the end of

225 the kerf, and it required 259 pounds to bend the board 5-8 of an inch. I did not make any further experiments with the 2-inch plank.

Q. Have you since the last examination procured from the defendants' counsel the copy of the Throckmorton patent put in evidence; have you examined the same, and do you understand the machine therein described? If so, please state the characteristics, and whether it is a machine adapted to doing the work of the Dunbar machine.

(Objected as incompetent and immaterial, and having no bearing ex-

cept upon an issue disposed of by the disclaimer, and because it does not appear that the witness is an expert; question admitted; exception.)

A. I did receive from the defendants' counsel a copy of the Throckmorton patent. I examined the same, and understand it. It is chiefly a machine for planing, tongueing, grooving, rabbeting, and edging boards. The saw attached to it, I mean the large saw specified as a veneer-saw, is a mere auxiliary, intended to remove the surplus thickness of irregular boards by sawing them off, and saving the piece, or veneer, as Mr. Throckmorton terms it. The order of instruments brought to bear upon the board is, 1st. The stubbing-knives. 2d. One pair of feeding-rollers. 3d. Edging-cutter, stated to be 18 inches in diameter. 4th. One pair of feeding-rollers. 5th. The veneer-saw. 6th. A pair of feeding-rollers, finishing wheel or disc, and finally, feeding-rollers. The rear rollers behind the board are not adjustable when running in any part of the machine. The saw is not adjustable excepting by unfastening its bearings and rebolting them. I mean not adjustable when in operation. The front rollers of each pair are elastic at the top and bottom, equally elastic. The veneer when cut off by the saw must either be bent far enough to clear the roller immediately behind the saw, which roller is specified to be five or six inches diameter, or must pass under it and be torn to pieces by the teeth of the saw and other cutters.

226 Any board sawn by such a machine of proportions and arrangement such as described, must be passed outside of the roller immediately behind the saw, that is to say, would require to be bent five or six inches out of its course in a mean distance not over 33 inches. The machine is described, operated as suggested by Mr. Throckmorton, that is, by having the cutter removed, and using it as a resawing machine I regard as impracticable for two reasons: 1st, because there is no means of regulating the thickness of the board being cut; and, 2d, because half of any plank would be too stiff to admit of being bent outside of the last pair of rollers, which it would require to be, particularly as he suggests planing one of the boards at the same operation.

And being cross-examined by Mr. Glassey:

X Q. Are you one of the plaintiffs in this suit?

A. No, sir.

X Q. Are you related to one of them? If so, how?

A. One of them is my son, Eugene S. Eunson.

X Q. What interest, if any, have you in the subject-matter of this suit?

A. I have no interest in it.

X Q. What is your business?

A. I am at the present time attending to my interests in the Myers & Eunson patent.

X Q. What is your customary occupation?

A. For the last seven years, I have been connected with the fire-insurance companies; the last three months of that time I was *was* special agent of the Pacific Fire Insurance Co. of San Francisco; I was making engineer's surveys.

X Q. How long is it since you personally had anything to do with the construction or management of sawing machinery?

A. Over twenty years.

X Q. When, and for how long a time, did you personally have anything to with the construction or management of sawing machinery?

227 A. I have had a good deal to do with the construction of sawing machinery since 1843; occasionally, not all the time.

X Q. When did you first have anything to do with the business of sawing or the construction or management of sawing machinery?

A. In 1842 and 1843.

X Q. What had been your business before that time?

A. I had been engaged in constructing machinery of various kinds, and pattern-making.

X Q. What kind of machinery had you been making?

A. Iron-cutting machinery; steam condensers; I have been a working mechanic for a large portion of the time; I never carried on the business of manufacturing machinery on my own account, though I have *been* superintended it for others.

X Q. State how you were occupied from 1842 or 1843, down generally.

A. From 1842 and 1843 until 1865, I was engaged in manufacturing machinery of different kinds; from 1865 until last November, I was engaged in insurance busi'esss.

X Q. From 1843 to 1865, were you engaged in manufacturing sawing machinery to any extent?

A. Yes, to some extent; I do not wish it to be understood that this was during that time my exclusive employment; from 1852 to 1856 it was my exclusive employment almost.

X Q. Did you build any sawing machinery except under the patent in question in this suit?

A. I have been employed in building sawing machinery that was not under this patent, in the early part 1842 and 1843; since then I have buil*d* none except under this patent.

X Q. Did you ever operate any sawing machinery?

A. None except that under our patent; that I have operated.

X Q. How long since?

228 A. The last time, when it was my regular employment, was in 1858. I have frequently operated them since, however, for short periods, the last time being last July.

X Q. Were you ever a practical sawyer?

A. Yes, sir; on our own machines.

X Q. When, and for how long a time?

A. I think in 1855 or 1856, in our mill in Thirteenth street, and in 1858.

X Q. Were you, at those times, doing work as a sawyer for a livelihood?

A. Yes, sir. In the first instance I ran one of our own saws in Thirteenth street, and in the last case I ran one of our saws in Grand street, near the ferry, where I did custom resawing, and made back-stuff for looking-glasses and pictures.

X Q. About how long a period, in all, including the times mentioned, have you had practical experience in running a saw yourself?

A. Over a year, I should think.

X Q. And you never ran any saw except the Myers & Eunson?

A. No, sir; I have used saws for a long period, but not running resawing machine.

Y Q. You have not run a saw since 1858?

A. Not for a living.

X Q. To what extent, since 1858, have used saws at all?

A. I used one in Philadelphia. I had a half interest in that machine, and I have had a new machine put up there since that. The last I had to do with it was putting one up in Detroit, starting it. That was last July.

X Q. How many machines made by Doncaster, of Albany, have you seen in operation?

A. I cannot tell; quite a number.

X Q. How many Roff & Huntingdon machines have you seen in operation?

A. Eleven, at least; thirteen.

X Q. How many by Thompkins, of Rochester?

A. I suppose six or seven using deflectors. I have seen, perhaps, three or four that did not; perhaps ten or eleven altogether.

229 X Q. How many built by Cornell, Gleason & Graham, of Rochester?

A. I may have seen as many as of Tompkins.

X Q. How many of Ball & Co.'s?

A. I think four or five.

X Q. Of Smith, of New Jersey?

A. I cannot tell; probably about as many as of Cornell, Gleason & Graham.

X Q. Of Walker, of Chicago?

A. I have not seen many of them in operation; perhaps three or four.

X Q. Of Lee and Leavitt, of Cincinnati?

A. Three.

X Q. How long ago was it that you saw these various machines?

A. In May and June of this year, I think. I had seen some of them before—the Doncaster and several others.

X Q. Before the summons of 1872, had you particularly observed any of these machines?

A. I had.

X Q. When and where?

A. It is almost impossible for me to give the dates or even the places. A large portion of my time was spent in travelling on other business. I made no note of where or when I saw them.

X Q. Before this year, did you make it a business to discover and examine into the operations of these other machines?

A. I frequently looked at them, when I had opportunity, but did not make it a special business.

X Q. When was it that Throckmorton took a license under your patent?

A. June 10, 1859.

X Q. Do you or not know that, shortly before that time, a machine had been built under the Throckmorton patent which Throckmorton had sold, to be used in Brooklyn?

A. I did not know, and this is the first I have heard of it.

230 X Q. Did not you then see the specification and drawings of the Throckmorton patent; did you not then examine them?

A. I remember having seen drawings; I do not remember having seen any specifications; Mr. Throckmorton showed me what I did see.

X Q. Were you not informed by him that a machine had been built under his patent, and sold, at or before the time he took a license, as you say?

A. No, sir.

X Q. Were you ever informed of that fact?

A. I never was informed by anybody that there was ever any machine made under that patent, except the first one.

X Q. What information had you as to that?

A. I have heard Mr. Throckmoton speak of a machine that he made, and disposed of to Mr. Wilson, to whom he sold the patent. It was put out of existence by Mr. Wilson, I believe, as an operating machine.

X Q. Did not that Mr. Wilson own the right under the Woodworth patent?

A. Yes, sir; James E. Wilson.

X Q. Did not you understand that he bought that patent to prevent its going into competition with the Woodworth?

A. I did.

X Q. Where you informed how much Throckmorton was paid for that machine?

A. Mr. Throckmorton informed me recently that he was paid $10,000 for the patent, not for the machine.

X Q. How many times have you been in the factory of Dunbar Co.?

A. I cannot tell.

X Q. About how many?

A. Occasionally during the whole time that there was a Huntingdon machine in operation there.

X Q. Can't you say how many times in all?

A. I cannot.

X Q. Have you been there five times?

231 A. I presume I have been there more than five times.

X Q. Have you been there ten times?

A. It is useless for me to guess.

X Q. Can you say positively that you have been there over three times?

A. I can.

X Q. How much oftener can you say positively?

A. I cannot say positively.

X Q. How long is it since you were last there?

A. Probably three or four hours. I was there this morning.

X Q. Before this morning, how long since you were there?

A. I don't know, but I might have been there yesterday. I was there quite recently. I presume I may have been for perhaps five times since I returned from the West, a few days ago.

X Q. How long were you away West?

A. Two weeks the last time.

X Q. Before that, how many time' subsequent to June, 1871, had you visited Dunbar's?

A. I cannot say. I would not say that I had been there at all since.

X Q. Do you say, then, that all that you have seen of the sawing machine at Dunbar's since June, 1871, is what you saw of it since your return from the West?

A. I do not say so.

X Q. After June, 1871, and before you last went to the West, did you see Dunbar's saw?

A. I have an impression that I did, but I do not remember distinctly.

X Q. You have testified that you have examined the resawing machine now run by the defendant, on your testimoney of 17th of October inst. When did you make that examination?

A. I did not note the day of the month nor the hour; it was within a month certainly.

X Q. Was all your testimony with regard to the saw used by the defendants based upon that examination made by you within a month?

232 A. All that I have said in respect to the saw now in use was based upon that examination.

X Q. What was the difference between the Dunbar machine as to which you have testified, seen by you within a month, and the machine used by Dunbar six months ago?

A. I don't know that I can say.

X Q. Can you say positively that you ever saw the machine in use six months ago?

A. I cannot.

X Q. Did you see the machine in use by Dunbar & Co., prior to June, 1871?

A. Yes, I have.

X Q. You have testified as follows: "It is not the same machine; it is an entirely new machine, with the exception, I understand, of the flange." How do you know that?

A. I remember the general outlines of the old machine, and I perceived that this is a different machine.

X Q. What are the differences that you observed?

A. I observed a difference in the frame; a difference in the diameter of the saw; a difference in the feeding rollers.

X Q. Anything else?

A. The frame of this machine is an iron one. I believe the frame of the old machine was wood. This saw is larger in diameter; the plates are longer; the rollers, feed-rollers, seem to be longer; and there is a difference in the way the springs are applied to the elastic side.

X Q. Do you know whether or not there is any difference in the saw proper, except as being of that thickness?

A. The thickest part near the flange.

X Q. What was the diameter of the stiffening plate or flange?

A. I did not measure it.

X Q. What is its thickness?

A. The point immediately outside of the recess is half an inch from the inside of the plate.

233 X Q. Did you measure that?

A. I did.

X Q. What is the size of the Hamilton saw.

A. A little over a quarter of an inch.

X Q. What is its diameter?

A. I did not measure that.

X Q. Since 1858, have you had occasion to observe the working of a Myers & Eunson saw in detail?

A. I have.

X Q. How often?

A. I cannot say; it has been so frequent that I did not keep any note of the number of times.

Adjourned to 11 a. m. of October 25th, 1872.

JOSEPH GUTMAN, JR.,
Master.

NEW YORK, *October* 25, 1872—11 a. m.

Present, counsel as before.

Cross-examination of the witness Eunson resumed by Mr. Glassey:

Q. What interest have you in the patent of Myers & Eunson?

A. I am half owner of all the patent ouside of the city of New York; the cities of Philadelphia and Chester, Pennsylvania; a small portion of Brooklyn, and the city of Cleveland, Ohio, and county of Guyahoga.

Q. Mr. Throckmorton had sold his patent to Mr. Wilson before he took a license from you, had he not?

A. He informed me that he had sold his patent to Mr. Wilson, reserving to himself the sawing portion of the patent.

Q. What did he pay you for the license you say he took?

A. Three hundred dollars.

Q. How long ago was that?

A. The sale took place on the 10th of June, 1859.

Q. Was the license for the whole of the remainder of the term of the patent?

A. Of the first term.

234 Q. How long had the patent to run at that time?

A. Until the 23d of May, 1868.

Q. Did you ever see the Thockmorton machine as constructed?

A. No, sir.

Q. Did you ever see any drawing of it except the one handed you by the defendants' counsel—the one exhibited here in connection with Mr. Renwick's deposition?

A. Mr. Throckmorton showed me a drawing of it at the time he purchased the right. I was also shown a drawing in this room at the last meeting by Mr. Dunbar.

Q. Can you state, from any knowledge you have on the operation of sawing machinery, to what extent a plank half an inch thick could be deflected at a distance of thirty-five inches from the point of cutting without breaking?

A. The distance to which a plank of that thickness can be deflected depends upon the quality of the plank and whether it is dry or wet.

Q. Do you wish to be understood as saying that wood of average quality—half an inch in thickness—could not be deflected five inches from the line of the saw, thirty-five inches from the point of cutting, without breaking?

A. I do not think it practicable to deflect a half-inch board of average five inches out of its course within the distance represented by the drawings of the Throckmorton machine between the solid part of the wood at the lower edge of the saw and the centre of the fifteen-inch roller behind it.

(Objected to as irresponsive.)

A. I will say that a great deal of lumber that is resawn could not, in my opinion, be bent in that way without breaking.

Q. Could lumber of average quality, one-quarter of an inch in thickness, be deflected five inches from the line of the saw from 33 to 35 inches from the point of cutting without breaking?

A. Yes, sir.

235 Q. And the same thing is true of lumber of less thickness, is it not?

A. Yes, sir.

Q. What do you understand to be the purpose of the circular saw shown in the drawings attached to the Throckmorton patent?

A. To remove the surplus thickness of the plank to be planed, tongued, and grooved, and to save that thickness for other purposes.

Q. Did you ever run or superintend the running of a circular sawing-machine of any kind except the Myers & Eunson saw?

A. Only the common bench-saw.

Q. What was the largest size of bench-saw you ever saw?

A. Probably fifteen inches. I wish to be understood in regard to running such saws that it has been confined to doing work connected

with pattern-making, though I have superintended the running of bench-saws in our mill in 13th street.

Q. How long since you did so?

A. Some sixteen or seventeen years ago, in our mill in 13th street, and for pattern-making within the last ten years.

Q. Have you been the agent of Myers and Eunison in issuing licenses and prosecuting suits for the infringement of this patent?

A. I am now.

Q. How long have you been?

A. Not much over a year.

Q. Do you know at what rates licenses have been given?

A. There is no fixed rate, the amount depending upon the quantity of business.

Q. Do you not know of rights having been sold for twenty dollars?

A. I know I have offered to license one machine for that amount.

236 Q. Do you know of any being charged more than fifty dollars where there was no litigation?

A. Yes, sir.

Q. To whom?

A. Spearman Bros. paid $1,000 for their license.

Q. When?

A. Shortly after the extension of the patent in 1868. I may mention another case where there was a settlement made for $2,500.

Q. Is not fifty dollars the highest price asked for a license to use that patent?

(Objected to; question admitted.)

A. No, sir.

Q. Was not fifty dollars the amount asked of Vincent, Koch & Co., of Tonawanda?

A. Yes, sir.

Q. Was not fifty dollars the amount demanded of Julius Hawley & Co., of Bridgeport?

A. Yes; these machines referred to were saws made by Doncaster, where they were using what he calls clips or deflectors alone; small saws, mostly for siding.

Q. Was not $25 the amount demanded from Sherman & Morcron, of Glenn's Falls?

A. That is the amount I offered to settle with them for.

Q. Was not $50 the amount asked from Freeman & Co., of Fultonville?

A. Yes, sir.

Q. Was not $50 the amount demanded from Millman, of Fort Edward?

A. No, sir; it was $40.

Q. Was not $30 accepted from Wing & Knapp, of Sandy Hill?

A. $40 was the amount bargained for and agreed upon, and when the money came to be paid, one of the partners told me he had been sick, and his son had been sick, and that he was poor. At that time the money was in my hands, and I handed him back $10.

Q. What was paid by Culver, Barber & Co.?

237 A. They have not settled.

Did you offer to take $75?

A. I did, provided they settled at once; that they did not do.

Q. What was the size of the saw run by the Keystone Mills, Culver, Barber & Co., at Williamsport?

A. I cannot say distinctly; I think not more than 26 inches; it was a small saw.

Q. These amounts were paid for licenses for the whole term of the patent yet to run, were they not?

A. They have not all been paid, nor half of them; it is very doubtful if the parties will accept the offer, which in each case is limited with regard to time. But where they have been paid, it is for the remaining part of the extension. These are mostly small saws, and in places where there is very little work for them to do. I also wish to state, that a number of small saws, siding saws, have been licensed for $100 apiece during this year.

Q. There is a large amount of work done on those siding saws, is there not?

A. On some of them; not on any of those that I have referred to. I also wish to state that I have licensed one machine similar in description to the Doncaster saw for $500; one for $225, and one saw made by the same makers as the Dunbar machine, and two saws similar to the Doncaster for $2,500.

(Counsel for defendant moves to strike out all that is not responsive. It is so stricken out.)

Q. Is not the business of cutting sidings as important and extensive as that of resawing?

A. I am not in possession of the statistical facts to enable me to answer.

Q. Is not all the knowledge you have, or have had during the last fourteen years, in regard to the business of sawing such as you have acquired in your dealings with the Myers & Eunson patent saw exclusively?

A. No, it is not; I have been an interested observer of other machines that were in use for that purpose.

238 Q. What circular sawing-machines have you observed that don't use any deflecting-plates?

A. I have observed circular saws, clapboard-saws made by Fay & Co., of Cincinnati, that do not use them; Tompkins, of Rochester, is now making saws that do not use deflecting-plates; Smith, of New Jersey, makes saws that do not use deflecting-plates, and I believe Cornell & Dangler make some.

Q. Have you had anything to do with any of these saws; making, selling, or running them?

A. No, sir; nothing further than observing them in operation.

Q. Have you, during the last fourteen years, had anything to do with circular sawing-machines other than Myers & Eunson patent?

A. Yes, sir; I have had to sue some of them for infringing.

Q. Was that all you have had to do with such machinery?

A. If you mean by all that I have had to do with them, whether I have operated with them, I answer I have not.

Q. In operating the Myers & Eunson saw are the two plates always used?

A. That depends upon what you are doing with it.

(Question repeated.)

A. For ordinary sawing, they are?

(Question repeated.)

A. I should say they are; there may be exceptions at the option of the sawyer at times; it is hard for me to say what the sawyer may do.

Q. Is or not one of the deflecting-plates sometimes removed from the Myers & Eunson saw?

A. I have not removed one of them when using the saw; I don't know what a sawyer might do.

Q. Do you say that you never removed one of the plates while running the saw?

A. I don't say anything of that kind; I tried it in all possible ways.

239 Q. Did you ever cut two and one-half inch thick plank on that saw?

A. I don't remember cutting two and one-half; I have cut two and one-fourth.

Q. Did you keep both plates on?

A. Yes, sir.

Q. Are the two deflecting-plates on your saws placed exactly opposite?

A. Very near; not quite, I believe.

Q. Which one is advanced?

A. The one in the flat side usually.

Q. Is that according to the description of the patent?

A. The deflecting-plate on the rounding side of the saw is in the model and drawings represented as covering the flange.

Q. And in advance of the other plate?

A. Yes.

Q. But that is not the manner in which it is used?

A. That is not the way in which it is used now; between the time of making application for the patent and the time of its issuing from the Patent-Office, we changed the deflecting-plate on the rounding side of the saw making a recess in the flange so as to keep splinters from passing between the deflecting-plate and the saw.

Q. You have testified as to the differences between the saw used by Mr. Dunbar prior to June, 1871, and the saw that he uses now; are there any other differences than the substitution of an iron for a wooden frame and the use of the larger segments and the removal of the clamps and one of the plates?

A. There is a provision for shifting the saw up towards the rollers as it becomes less by wear, and for shifting the deflecting-plate also; there is also a difference in the elastic feeding-rollers, they have springs towards the top and bottom which, I believe, the first machine had not; there is also some difference in the mode of moving the rollers on both sides.

240 Q. Do you know whether or not for more than a year past the saws made by Roff & Huntingdon are made adjustable to compensate for wear?

A. I do not know it.

Q. How many machines manufactured by Roff & Huntingdon have you examined during the last year?

A. I have examined very few, if any, minutely.

Q. Do not all the segmental saws wear down?

A. They do.

Q. What difference except in size is there between a saw with segments of fifteen inches and one with eighteen-inch segments.

A. That depends upon the particular construction of the plates.

Q. Can you state as a fact within your own knowledge that there is any difference between the rollers of Mr. Dunbar's machine as it now exists and those used prior to June, 1871?

A. I can only say that I have not seen any machine in use prior to that time in which I have observed rollers arranged as in Mr. Dunbar's machine; I would not be certain; I think there is a difference.

Q. State specifically what that difference is?

A. I have not examined the machine used by Dunbar previous to 1871, to give a minute description of the difference between the rollers of the two; I will say, however, that there is no impression on my mind of having seen a machine made by Huntingdon.

(Mr. Glassey here stops the witness on the ground that the latter part is not responsive.)

Q. In your statements made on your direct examination as to the differences between the machine used by Mr. Dunbar prior to June, 1871, and the machine now used by him, were you testifying to facts within your own knowledge or from information, or guessing?

A. I was testifying to facts observed from having seen the machine prior to 1871, but as I then stated, I did not examine it minutely.

241 Q. How can you then say that there was a difference in regard to the rollers?

A. Because I remember sufficient of the machine in use before 1871 to have the difference strike me at once on observing the new machine.

Q. Do you not remember what the difference is?

A. I think I do.

Q. Please state first what you remember as to the size and adjustment of the rollers used in the machine of Mr. Dunbar, prior to June, 1871?

A. I cannot say with certainty, but my impression is that the rollers on the adjustable side of the saw were both moved with a screw at the same time; that the rollers on the other side were moved by separate screws, each independent of the other; the size of the rollers, I think, was *a* larger, and were not so long; I do not speak with certainty; I give my impression to the best of my memory.

Q. Do you state as a fact that the rollers on both sides were moveable or adjustable?

A. That is my impression.

Q. Were the springs attached to or connected with the rollers?

A. I cannot say positively, I presume there were.

Q. Now describe the rollers and their adjustment as they exist on the machine now in use?

A. I observed that both the adjustable and elastic rollers are moved from the same side of the machinery; the adjustable rollers are moved by a hand-wheel and a screw connected, of course, with standards which slide across the frame. The rollers on the elastic side are run in sliding standards also, and regulated by screws connected with gears; there being India-rubber springs, between the screws and the standards; each roller being independent.

Q. Can you swear that to your knowledge the adjustment of the rollers on the machine now used by Dunbar & Co. differs in any respect from the adjustment of the rollers on the machine used by them prior to June 1851. I don't want your impression, but the positive knowledge which you are willing to testify to?

242 A. Not positively.

Q. In the Myers & Eunson patent is not one of the deflecting-plates shown in advance of the other?

A. Yes, sir.

Q. In the machines as constructed and used are not the plates opposite to each other?

A. The plates are opposite undoubtedly in the patent, and also in the machine as it is used. If you desire by your question to ascertain whether the point edge of the deflectors in the Myers & Eunson machine

as used are opposite each other, I would say that usually the deflector on the flat side of the saw is a little in advance of the other.

Q. Then the arrangement of the deflecting-plates adopted, in practice differs from that described in the patent, does it not?

A. In the particulars that I have described, that is, that we have always from the date of the letters-patent recessed the flange on the rounding side to receive the deflecting plate on that side?

Q. What is the practi'al effect of the change?

A. The practi'al effect is to reduce the distance that the board on the rounding side of the saw has to be bent out of its course.

Q. Is that all?

A. And avoid the danger of slivers passing between the deflecting-plate and the saw.

Q. How would the saw operate with the deflecting-plate on the rounding side, placed in advance of the plate on the other side, if you know?

A. That would depend to some extent on the length of the cutting-blades.

Q. Have you ever seen a saw operated or used with deflecting-plate on the rounding or flange side, placed in advance of the other plate?

A. I have seen two; one of them was our own machine, the first one made according to the patent, which was altered prior to the date of the patent, as described; and the other was a machine made by Lea-
243 vitt, of Cincin'atti, and running in that city. I may remark in both cases the deflecting-plates were made strictly according to that represented in our model in Washington.

Q. How long was the first machine, referred to in your last answer, used in that condition?

A. Probably six months.

Q. Did you then change the adjustment of the plates or make a new machine?

A. The flange and shaft were sent to the machine-shop, a recess turned in the flange, the same deflecting-plate was then cut down so as to fit within the recess.

Q. What change, if any, was made in the adjustment of the deflecting-plate?

A. No material change, so far as I know.

Q. Was there any change in the relation of the plates to each other; that is, was the plate on the recessed side advanced or moved back from the other?

A. The front edge of the deflecting-plate on the flange side of the saw by that change was moved to about equal with the other plate.

Q. Why was that change made?

(Objected to as immaterial; question admitted; exception.)

A. That change was made for the purpose of saving the thickness of the deflecting-plate in bending the board and to prevent the introduction of slivers between the deflecting-plate and the saw.

Q. These experiments that you have testified to, when were they made?

A. They were made partly on the 18th and 19th of October; the two latter experiments were made on that date, the others a few days previous.

Q. Did you ever measure the opening of any lumber resawed on the machine used by Dunbar?

A. I applied a straight-edge to the flange side of Mr. Dunbar's machine on purpose to ascertain how much lumber must necessar'y be bent

on purpose to pass the flange; I did not measure the opening in the lumber.

244 Q. In making these experiments that you have testified to, were the several pieces of board sawed in the centre?

A. As near as may be.

Q. When you came to attach the weights for the purpose of deflecting them, on which side of the board did you attach them?

A. In the first experiments that I made I attached the weight to the edge of the board that was lowermost in the machine. In making these experiments the weights were attached to the side of the board that had passed on the flange side; but this without design on my part, no question having occurred to me as to their being any difference.

And being further examined by Mr. Betts, he says:

Re-d. Q. Please state, in addition to the sums you have already stated as having been paid, for the right to use the inventions or some of them described in your patent, what other sums have been paid for such rights?

(Objected to as immaterial; question admitted; exception.)

A. Hamilton & Co., of Buffalo, paid $225; Bronson, of Rochester, paid $500. These were machines similar to the Doncaster. Mr. Kingsford, of Oswego, starch-manufacturer, paid $2,500 for one Huntingdon machine and two small Cornell, Gleason & Graham machines; Foster & Davis, of Burlington, paid $600; Duryea paid $400.

Q. How much did T. B. Peddie pay?

A. $1,200.

Q. How much did Peddie pay for the license and past use?

(Objected as already answered. Objection withdrawn.)

A. $4,500.

Q. How much did Frame, Nichols, and Robbins pay for license and past use?

(Objected to as irrelevant; question admitted; exception.)

A. I have no personal knowledge.

245 Q. In the case of the licenses for small sums which you have mentioned, what were the machines—section-saws or solid-plate saws?

A. Small solid-plate saws, mostly made by Doncaster, and infringing only by the use of which he calls clips or deflectors; the machines being used in small places where there was very little work to be done.

And being further examined by Mr. Glassey, he says:

Re-X Q. How many of the persons that you have mentioned in your re lirect have been sued?

A. Only Peddie, I think.

Q. Did he defend the suit?

A. He did.

Q. Was that amount paid after an accounting or on a settlement?

A. On a settlement, I believe.

Q. When you say small places do you mean places where there is comparatively a small amount of business done?

A. Yes, and the persons licen'ed doing a small business.

Q. Are not Glenn's Fall', Tonnawanda in New York, and Williamsport, Pennsylvania, places in which a large amount of business is done in cutting and selling lumber?

A. True, but the places where the lumber is cut and sold are not usually the places where most of the resawing is done.

Re-d. Q. Add any other licenses-fees that you have since thought of.

A. Bell, Coggershall & Co., of Louisville, Kentucky, paid $1,100; Cate, of Baltimore, paid $1,100.

Re-X Q. All these amounts were paid in full for past alleged infringements and future rights to use?

A. Yes, sir; some of them had not been in operation at all.

Q. What did Kenyon & Newton pay?

A. $300. This did not embrace a license. They used the same kind of a machine as Mr. Dunbar.

246 Q. How many of the persons who have paid these large amounts went through an accounting?

A. I think Newton and Kenyon were the only parties.

ROBERT G. EUNSON.

Subscribed and sworn to before me this 25th Oct., 1872.

JOSEPH GUTMAN, JR.,
Master.

EBEN PEEK, a witness of lawful age, produced on the part of the complainants, having been by me first duly cautioned and sworn to testify the truth, the whole truth, and nothing but the truth, and being examined by Mr. Betts, deposes and says:

I was examined in this cause prior to the hearing. I have been engaged since 1851 in the business of planing lumber, and from 1859 or 1860 on planing and resawing lumber for the last ten years, as proprietor; the ten years prior to that as foreman and manager; I am familiar with the Myers & Eunson resawing-machine since 1859 or 1860. I have in operation now three Myers & Eunson resawing-machines. I have been familiar with the resawing-machines in the market since 1859.

Q. Prior to June, 1871, and since 1859, was there any known means of running a segment circular saw practically, for resawing, without two deflecting-plates?

(Objected to as incompetent and immaterial; question admitted; exception.)

A. Not to my knowledge.

Q. Has your familiarity with the business of resawing since 1859 been such that, if any such machine had been known you would have been likely to have known it?

(Objected to as immaterial, incompetent, and leading. Ruled out.)

247 Q. Would you or not, from your familiarity with the market since 1859, have been likely to have known of such means if they had existed?

(Same objection.)

Q. What has been your familiarity since 1859 with the resawing business, and machinery for doing the same?

A. Having in operation from one to three resawing-machines of the Myers & Eunson patent, and two others, [vertical resawing machines, cutting from 2,500,000 to 4,000,000 feet per annum, in the city of New York; having for competitors other men engaged in the same business, and having paid Myers & Eunson, the patentees, sums of money for the right to run two deflectors, I think I should have known if there was any known means of resawing lumber with one deflector.

Q. Have you tried practically to run the machine with one deflector?

A. I had my operator, during the time the suit was pending against Nichols, Robbins & Frame, take off one deflector and run several boards

through the Myers & Eunson machine without one of the deflectors; the boards were not sawed uniform in thickness, from one end to the other, they ran to a taper. I have rented out power for the past ten years. I have had charge of a building for the purpose of renting out power.

Q. What elements enter into the computation of the value and expense of power.

A. Wear and tear on the engine or motive-power, fuel, expense of water, and the men employed to run the same.

Q. Does or does not rent?

A. It does.

Q. From your experience in running circular sawing-machines like the Myers & Eunson, can you estimate what the expenses are in the business, or ordinarily conducted in connection with other machines, planing, &c.?

(Objected to as immaterial; question admitted; exception.)

248 A. The expenses of running a resawing-machine are based upon the wages paid to the operator in connection with his assistant, and the relation that exists between that machine and other machines in the same building, driven by the same engine, and the rent paid for the premises, and whether the fuel used is expensive or not.

Q. Can you state what the average expense of wear and tear and repairs of boilers and engines are in a resawing and planing establishment, assuming that the boiler and engine are well put up, at an expense of about $2,500, the engine being about 25 or 30 horse-power, all the power being employed?

(Objected to as incompetent and immaterial; question admitted; exception.)

A. The average expense of wear and tear should not exceed more than ten per cent. of the cost. I am running an 80-horse engine. My repairs annually do not exceed $150.

Q. Do you know what, among persons conversant with the use of boilers and engines, is considered a fair allowance for the expense of ordinary repairs and wear and tear?

A. As I stated before, ten per cent. should cover the expense of wear and tear and repairs. I mean to say that ten per cent. is considered sufficient to cover repairs and wear and tear.

Q. Did you hear Mr. Eunson detail some experiments that he made as to the binding force of different pieces of wood, such as are used in resawing, together with the results of those experiments; were you present when such experiments were made, and did he or not state the correct results?

(Objected to as incompetent and immaterial; question admitted; exception)

A. I did hear his statement as to tests made October 16th. I was present at that time and witnessed the experiments made, and his statements were correct, as I heard them. As to the quality of the wood he stated being soft or hard, I did not examine the wood particu-

249 larly on that point, but believe the statement to be correct.

Q. Do you know of any payment having been made for having used, or for the right to use the Myers & Eunson inventions? State those that are in your knowledge.

(Objected to as not in rebuttal; question ruled out; exception.)

Examination adjourned to Oct. 26, 1872, at 11 a. m.

N. Y., *October* 26, 1872—11 a. m.

Present, counsel for the respective parties, as before.

Cross-examination of the witness Peek, by Mr. Glassey:

I have never been an operator in the resawing-machines. I have been familiar with them, spending a large portion of my time in my sawing-room, and consider myself as having an understanding with the workings of the machine. I was first acquainted with sawing-machinery in 1851, when I first entered a planing . I was foreman in 1852. I first became acquainted with the Myers & Eunson machine in 1859 or 1860. I was not connected with the business as an operative. I have had experience with circular sawing-machines; have run them, filed them, and set them, and, in fact, have operated them at times. I consider myself fully conversant with the uses of the resawing-machines. I have never used any circular resawing-machine other than Myers & Eunson's. During the last fourteen years I have seen used the Doncaster and the Huntingdon circular resawing-machines. I have not seen a great deal of work done on Huntingdon saws, as I have not spent much time in mills where they were used. I have seen them in operation.

I own an interest, consisting of the west side of the city of New York, in the Myers & Eunson patent in connection with my partner, Mr. Bogert. We owned that interest since the time of the extension. I bought the extension period. I only had rights before that. I acquired a right to run one saw in 1862, west of Broadway, between Fourteenth
250 street and Canal. As near as I can remember, two or three years after I purchased another right; I subsequently bought another right before the extension. Before I owned these rights I had not been running the patented saw. In 1859 and 1860 there was two in operation in a mill in 13th street, of which I was foreman. Before 1859 I had no experience in any circular resawing-machine. I have been interested in the patent, or have had rights under it ever since 1862. In the Myers & Eunson saw the deflecting-plates are exactly opposite each other. I have never seen one in which one of the plates was in advance of the other. I don't think it would make much difference to advance one of the plates. On the rounding side of the saw it could not be advanced. It would be preferable, however, to have one opposite to the other. I rent out steam-power myself, and have had charge of the renting of steam-power since 1861, in a large building at the corner of Bank and West streets. The price of power does not vary particularly according to location; room only varies. I get $100 to $200 per horse per annum. One or two horse-power rented would be from $150 to $200 per horse. A large amount rented would be from $100 to $150. I arrange according to quantity. Those are the average prices in the city. That is merely for power, irrespective of room.

We cut all thickness on the Myers & Eunson saw from one to two inches in thickness; cannot use it well for any greater thickness, because the deflection of the piece sawed injures the lumber by checking.

If one of the plates were advanced before the other, I do not think that the effect would be to throw the lumber upon one side. The rolls could be adjusted to help it. As I said before, it would be preferable to have them opposite one another. I have never tried a quarter-inch piece from a two-inch plank, but we frequently take a half-an-inch piece from a two-inch plank with both deflectors on; lumber usually resawed in our business is not cut in that way to any extent. I have never
251 had any orders for anything of that kind. We have once taken off one of the plates in making the experiment of resawing pend-

ng this suit. In practice, we keep them on all the time. I am sawing now two-inch spruce with both plates on for the Erie railroad.

I have no experience in hiring or letting horse-power lower in the city than Bank street. I have had interviews, however, with parties renting power in the lower part of the city. I hire power myself at Bank street, at my place. I pay seventy cents per 1,000 feet, face measure, on lumber resawed; that also includes the room used. In my estimate of the cost of wear and tear and repair, I gave estimate on boiler and engine.

Q. Is it your opinion that a boiler and engine which had been used for a year could be sold at 90 per cent. of their cost?

A. It is not known what it would bring; if sold to a party coming into the building, it probably could; if to be taken away, probably not.

Q. Is there not a great difference in the durability of boilers and engines?

A. There is, depending on the quality of the iron and strength, and the care taken of them.

Q. How many kinds of boilers have you had experience with as to cost and durability?

A. Plain cylinder-boiler, flue-boiler, tubular-boiler, and the sectional-boiler, that is about all there is except the upright boiler.

Q. In estimating the depreciating wear and tear of boiler and engine, did you take into consideration rent, insurance, and taxes?

A. My answer was only to the wear and tear, terms whose meaning are well known. I made the estimate full high to cover all contingencies.

Q. In taking account of stock is it your practice to take the same, the rate, the value of an engine and boiler after a year's use?

A. No, sir.

And being further examined by Mr. Betts, he says:

252 Re-d. Q. On what do you base your estimate of the allowance for wear and tear on engines and boilers?

A. On an experience of twenty years with several engines and boilers and information obtained from parties running engines and repairing engines. I have not known of eighteen-inch saw-plates except within a year or two; the largest size in use known, has been fifteen inches; the saw-plate would be relieved somewhat from the binding effect of the boards by having the plates longer; I believe eighteen-inch saw-plates have not been used before because the steel has not been used before, because the steel has not been manufactured.

EBEN PEEK.

Subscribed and sworn to before me this 26th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master, &c.

Adjourned to October 29th, 1872, at 10 a. m.

N. Y., *October 29th*, 1872—10 a. m.

Present, Mr. Betts, counsel for complainants, and Mr. Glassey, counsel for defendant.

JOHN ARMSTRONG, a witness of lawful age, produced on the part of of the complainant, having been by me first duly cautioned and sworn, and being examined by Mr. Betts, deposes and says:

I have worked for John Dunbar & Co. for about five or six years. I left there about two or three months ago; had worked there for about five or six years. I went there first sawing box-lumber with circular

saw, jig saw. I have run the large circular saw. I think I went there first to make boxes. It was not my duty to run the large circular saw when Phillips was away unless I was called upon; I have run it. I recollect the instance of their taking off one of the deflecting-plates and the clamps; there was never any serious trouble about it;
253 after they took these off there was a slight trouble until they got the hang of the saw. I can't very well state myself what that trouble was. I suppose the man that ran the saw could state it. I am not a professional resawyer. I am a box sawyer. I have been subpœnaed to attend here. The saw heated sometimes after taking off one of the deflecting plates.

Q. Did it ever heat badly?

(Objected to as leading; question ruled out; exception.)

A. The saw was never hot when Phillips was running it; it got hot with me one time; it heated slightly when Phillips was running it.

It would depend upon the size of the saw if there was ever any trouble about splitting the ends of the boards; when the saw got worn down very low the board would split a little at the end; the saw don't wear down very often. It depended upon the thickness of the stuff how much it split the end; on one and one-half inch thick board may be from three to five inches. I have not seen their new machine. Phillips managed to keep on running all the time; would stop and change the set and the filing, and she would go off very nice then. I don't know how long it was before he could run the saw as well without as with the clamps and deflecting-plate. It might have been a day or two, three days, till he got the hang of the filing and setting of the saw. I think he set and filed the saw slightly different after he got one of the deflecting-plates and clamps off.

And being cross-examined by Mr. Glassey, he says:

I have not seen Mr. Dunbar since I was served with the subpœna. I could not tell how often I ran the circular saw. Mr. Phillips was the regular sawyer. I ran it only when he was away, sometimes I would stand and look at it when I was not running it. I have known the boards to split when the clamps and two plates were on. If the boards are fed up closely, there is not as much danger of their splitting as if they were not. The saw heated sometimes when the two plates were
254 on; when it got dull sometimes, with a heavy plank. I think I ran the saw over a week continuously, maybe two weeks, I won't be positive, which.

The lumber was sawed very good indeed, after the clamps and plates were taken off; there was a slight difference in the ends of the boards on the one and a half inch stuff, but the boards split, too, when the clamps and plate were on, if the saw was dull. The rollers on the flange side was fast all the time; none of them adjustable. The rollers were the same as before clamps and deflecting plate were taken off. I never saw them altered or changed; they were of the same size. They never had any springs on the rollers; they were the same as before the clamps and rollers, spring both together.

And being further examined by Mr. Betts, he says:

I have known the flange heat up slightly sometimes, when the plate was off; very seldom, though I will say that. When I was running it the flange heated up once with me, that it heated up so bad once that I had to stop.

JOHN ARMSTRONG.

Sworn to before me this 29th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master.

ERASTUS W. ROFF, a witness produced on behalf of the plaintiff, having been by me first duly cautioned, and sworn to testify the truth, the whole truth and nothing but the truth, and being examined by Mr. Betts, deposes and says:

I was a member of the firm of Roff & Huntingdon. I made or had made the original Dunbar machine. I also made their new one. For the last ten years I have been a machinist, I have been engaged in building resawing machinery. Prior to June, 1871, I never knew of a circular segment saw which could be run without two deflecting-plates. Solid-plate circular saws were run with two flanges or collars on the sides; some were run without; these were independent from the
255 saw, not fastened to the saw. They were simply slipped on to the flange shaft; they turned with the shaft; the object was to stiffen the saw and spread the boards, using a thinner saw. I can't *that* say I ever knew of a larger circular solid saw to be used without the collars for general work, because I was not posted on resawing until I built this machinery. I have seen on an ordinary saw bench, a solid saw on a hand bench, used without these collars; saws from ten to thirty-six inches; they were used without mechanical feed. The first 18-inch saw-plate for segment circular saws that I ever saw was one ordered by Mr. Eunson, for Philadelphia, about twelve to twenty-four months ago. When we first commenced on resaws, we commenced with a ten-inch plate, and then gradually increased up to fifteen inches.

And being cross-examined by Mr. Glassey, he deposes and says:

In giving the dimensions, I mean the distance from the little circle at the bottom of the segment to the outer edge of the segment; in order to have the segment 18 inches, it would require the steel to be about 18½ inches; there would be no change involved in the rest of the machine by the use of larger segments. I built the resawing machine used by Dunbar & Co.; when they put on the 18-inch plates the work on the machine was done in my establishment; when it was reconstructed, the machine was made entirely new, with the exception of the flange, the arbor, and the boxes. I may have used a few of the old gear; there was no change made in the adjustment of the rollers on the flange side. I don't think there is any difference in the size of the rollers, except there is a little difference in the height. The present roller on this saw is one continuous roller; the aggregate height is about the same; there is not any difference in the springs; the edge of the saw is no nearer the rollers than before; the bed-plate does not project any further that I know. I don't know whether or not the pattern-maker has made any variation.

I think I have built 14 or 16 machines of our make, perhaps 8 of
256 Myers & Eunson. I have been building them eight or ten years. Dunbar's was the first one that I built; did not build one for Solomons before that; did afterwards. When I built those machines, I put on the clamps and the two deflecting plates. I was sued for an infringment of this patent for building the saws. I did not pay Myers & Eunson. I was not sued by them. I was sued by J. Lagowitz, of Newark; it cost me near $3,000; that included my lawyer's fees and damages. I paid my compromise of $1,650 as damages to Mr. Betts in that suit; that covered all the machines that I had built up to that time, which was in 1868.

And being examined further by Mr. Betts, he deposes and says:

In the new saw that Dunbar had, the rollers had two springs, one at the top and one at the bottom, and the old one had also. The new machine has an arrangement by which the saw can be removed up to the rollers as it wears away.

And being further cross-examined by Mr. Glassey, he says:

Re-X Q. There is not, I think, any change in the mode of adjusting the rollers on the flat side of the saw. The new machine was put in operation within a couple of months. I think the first machine we built was built so that the saw could be moved up as it wore down. We did not think that a new thing when we did it.

E. W. ROFF.

Subscribed and sworn to before me this 29 day of October, 1872.

JOSEPH GUTMAN, JR.,
Master.

Case closed as to prooofs.

257 N. Y., *September* 16, 1872—11 a. m.

Present, Mr. Betts, counsel for complainant, and Mr. Blake and Mr. Glassey, counsel for defendants.

Evidence on the part of the defendants, on accounting before the matser.

ABRAM SCOVILL, a witness produced and sworn on the part of the defendants, being examined by Mr. Glassey, counsel for defendants, deposes and says:

I reside at Brooklyn, N. Y. I am engaged in sawing, planing, and moulding mill business in Brooklyn; the firm is Kenyon, Newton & Scovill. I have been a partner in that concern five years last July; have been connected with the business of sawing about twenty years. I have seen the circular saw used by Dunbar & Co., the defendants in this suit. I have seen it in use. The circular saw used by our firm is on the same principle, I should think. Huntingdon, Roff & Co. made the saw used by our firm. I believe Dunbar's saw was made by the same concern. Ours is an iron frame. Theirs is a wooden frame. They are very nearly the same. Our firm were defendants in a suit brought by these same plaintiffs. We ran our saw with the two deflecting plates sometimes, and sometimes with one. After the injunction was served we ran it with one. The injunction was served more than a year ago; since then we ran our saw with one deflecting plate; before that we had been using what was known as the clamp, claimed by Myers & Eunson. The clamps used on our saw before the injunction, I should think, were the same as those used on the Dunbar saw. We have settled our suit with Myers & Eunson. After the injunction we ran it with one deflecting-plate, and after our settlement we ran it sometimes with two, but generally with one; we ran it very little, any way, since the settlement. After the injunction and be-
258 fore the settlement, we ran it somewhere between six months and a year. I can't recollect the dates. I did not see any great difference in the sawing, while we ran the saw, between the time of the service of the injunction and the settlement, from the way it was before. Our saw was a five-foot saw; it was a segment-saw. It had to be set a little different when ran without the second deflecting-plate and the clamps. There was no difficulty about it; you had to move the roll so that the

board would run with the saw. It required no more time than the other way. I don't see that there was any difference in the amount of the work it did when it was running. We had run the saw with two clamps and two deflectors. It required a little more power without the clamps and two deflecting plates; it worked as fast and as well. We had to tighten the belt a little; that is the way I could see that we needed more power for it. I don't think we used the saw as much after the injunction as we did at first. We used it as much as we did a little while before the service of the injunction.

And being cross-examined by Mr. Betts, he says:

After the injunction was served we were cited to account for our profits in running the saw. We attended before a master and rendered an account of the amount of sawing we had done. The amount of resawing was quite small. After the accounting had proceeded for a little while we paid $300, and made a settlement. I think about 800,000 feet was about the amount of resawing done by us before the service of the injunction. We made that settlement with Myers & Eunson four or five months ago. I could not say how much we have cut with the saw since the settlement, but it was very little—I should think 15,000 to 20,000 feet. I could not say how many times we have used both deflectors. I could not say without looking at the book how many times we have used
259 the saw; it was not very often; would not average once every two weeks. We only keep it for accommodation of the shop; we saw for ourselves only; we saw and plane for our customers. I have no means for estimating the difference in power required to use the saw without the two deflectors and clamps. I ran the saw personally. When I sawed with one deflector I set the rolls so as to throw the board off the side that had no deflector. I used to set a little more on one side than the other; used to make the set on that side where there was no deflector and less on the other side, so that it made the kerf about the same. Our saw has two sets of rolls—two near the saw and two further away. The curved clamps were attached to the rolls nearest the saw. We have used no clamps since the injunction. We took off both clamps. The two sets of rolls are on separate standards; the rolls go and come by rubber springs, independent of each other. We use the flange side for the line side of the saw; we have used that side since the injunction also.

Q. On which side do you retain the deflecting-plate?

(Objected to as incompetent and irrelevant. Question admitted. Exception.)

A. I have run it on both sides, sometimes on one, sometimes on the other. I should think I have run it more on the opposite side of the flange than on the other. I got the idea of running it with one deflecting-plate myself. Neither Mr. Dunbar nor Mr. Phillips told me how they were running their saw. Mr. Dunbar has told me that he was running his saw with one deflecting-plate, but I was running mine in the same way. My counsel told me I had a right to run it with one plate, and I knew it myself from the decision.

And, being further examined by Mr. Glassey, he says:

Redirect:

I made this setttement with Mr. Eunson personally. Mr. Eunson was to pay the master's fees.

260 All our feed-rolls were not independent of the clamps. Myers & Eunson's were. Ours act with the forward feed-rollers, not with the back rollers. Our clamps are attached to the rolls nearest the saw. Since the injunction, we have not been using the clamps. The feed-

rollers are adjustable. They always have been. We can move them and set them as we want to.

ABRAM SCOVILL.

Subscribed and sworn to before me this 16th September, 1872.
JOSEPH GUTMAN, JR.,
Master, &c.

MELANCTHON F. SHUREMAN, a witness produced on the part of the defendants, being first duly, by me, cautioned and sworn, on being examined by Mr. Glassey, counsel for defendants, says:

I am in the planing and resawing business in Fourteenth street, west of Tenth avenue, N. Y. City. I have been in the business thirty or forty years. I have done what is known as resawing more or less for twenty-six years. I use a circular saw for resawing. I use the American Co.'s saw with inserted teeth. The wood is fed to that saw with vertical rollers—four rollers—two on a side, all adjustable. The feed that I use principally is a self-centre feed. We have an apparatus on that saw to separate the wood as it is cut. There is a sort of a V spreader on the back end, behind the saw. We use one deflector-plate sometimes, sometimes none; have used two; not recently. I heard it was an infringement, and we took it off. Peek & Bogert claimed it. I could hardly tell the difference—I don't run the saw myself; my saw is different from Myers & Eunson's; mine is a solid plate-saw—between the running of the saw with two plates and with one. We sometimes take the spreader off and let the saw run naked, on certain kinds of work.

261 Our saw is about fifty-one inches; have never had a segment saw; have never run a Myers & Eunson saw or any saw made by Roffs, Huntingdon & Co. I know what is known as the Myers & Eunson saw. I have seen resawing done by it. The work of that saw is no better than that by the one we use. For such sawing as I do for boxes there is no difference that I am aware of. The power required for our saw depends upon what feed you have in it—from five to fifteen-horse power; do not know how many feet I could cut with five-horse power. We take out about an eighth kerf. The smoothness would depend on the feed. If you saw it fast, it would not saw as smooth as with a slow feed. There is scarce any limit to the smoothness with a slow feed, and there you can saw as smooth as planing.

When the Myers & Eunson plates are well ground they can take out a thinner kerf. We can generally take one-eighth kerf.

And being cross-examined by Mr. Betts, he says:

Have not been threatened with suit for infringement by Peek & Bogert. They told me not to run my saw with clamps and deflectors on it. We use no rollers except the four-feed rollers. We can run 21-inches-wide stuff through that saw without a deflecting plate; I don't run the saw, but I have not known the saw to heat, running wide stuff, but we have most of the time one deflecting plate on. Joseph Lyons runs our saw. When lumber is warped, Myers & Eunson can saw it better than I. I cannot do it with my saw without clamps.

And, being further examined by Mr. Glassey, he says:

Redirect:

Warped lumber is sawn by sawing through the centre with a circular saw, and making it narrow.

M. F. SHUREMAN.

Subscribed and sworn to before me this 16th September, 1872.
JOSEPH GUTMAN, JR.,
Master, &c.

262 WILLIAM JAYCOCKS, a witness produced on part of the defendants, being duly cautioned and sworn, on being examined by Mr. Glassey, counsel for defendants, deposes and says:

I am a lumber-dealer in Fourteenth street in this city. I have been in that business over twenty-five years. I am acquainted with what is known as resawing; I have it done all the time. I have had work done by the Myers & Eunson saw. I have had resawing done by all the different mills up there. I suppose they have different saws. I don't see any difference in my work, on whatever saw it is done on; they all make bad work sometimes. Mr. Schureman does most of my work since I have been in Fourteenth street. I used to saw mostly with Peek & Bogert. I don't see any difference in my work between Schureman's and Peek & Bogert's. I don't think you could tell the difference, if you did not know it, in looking at the lumber.

And being cross-examined by Mr. Betts, he says:

I don't have any work on an upright saw. Pine lumber for box-making will run from $25 to $30 for thousand feet. It has been lower; it has been down to $18 during ten years past; averaged about $22 per one thousand feet during ten years past. We sell by solid measure; by one thousand feet, I mean a thousand lineal feet, twelve inch' wide and an inch thick. One thousand feet of an inch and a quarter would be eight hundred feet sawn.

WILLIAM JAYCOCKS.

Subscribed and sworn to before me this 16th September, 1872.
JOSEPH GUTMAN, JR.,
Master.

CORNELIUS ACKER, a witness, produced and duly cautioned and sworn on behalf of the defendants, being examined by Mr. Glassey, says:

263 I am a manufacturer of packing-boxes. I carry it on at 518 West 15th street, N. Y. City. I have been in that business in this city 30 years. I am acquainted with work known as resawing lumber. I get some of my resawing done by Mr. Schureman, and some by Mr. Budd. I know the quality of the work done by the so-called Myers & Eunson saw. I have had work done by that and by other kinds of saws, and know the quality of their work. I like the quality of the work about the same. One suits me about so well as the other. I do not know whether Budd uses a Myers & Eunson saw, or whether he uses two deflecting-plates.

C. ACKER.

Subscribed and sworn to before me this 16th September, 1872.
JOSEPH GUTMAN, JR.,
Master.

ANDREW PHILLIPS, called as a witness for the defendants, being examined by Mr. Glassey, counsel for defendants, deposes and says as follows:

I am a sawyer, and have been so about 17 or 18 years; have been

with Dunbar & Co. between eight or nine years, at their factory in New York. During that time they have not run more than one circular saw at a time. I have been their sawyer all that time, except that I was sick three or four months, one time. When I first went with them, we got a circular saw; that saw was thirty-two inches; would cut a board between thirteen or fourteen inches wide, when it was new; that saw was used, I think, about three years. We couldn't get along with it; all the narrow lumber, that is, under thirteen inches wide, and 1¼ inch down to § thick, was run in that saw, but the saw grows smaller, and we had to fall back on the up-and-down saw. As nigh as I can come at it, during those three years, fully one-half of the resawing was
264 done on the up-and-down saw. We tried to make an improvement on that circular saw. We got a 42-inch saw in, to see if it would help, in place of the 32-inch saw; and, I suppose, through an oversight of mine, we had a 24-inch flange, and the segments were 12 inches, so that it did not in fact help *as* much; the segments being no higher, it did more work; it did pretty near ⅔ work then. I think we had that saw about three years—between two and three years. Then we got in a 54-inch saw; that was used between three and four years. We next got a 5-foot saw. We have had that about two weeks. Previous to the injunction, two deflector-plates were used on the circular saws. After the injunction, one was used. Two deflecting-plates have not been used at one time, nor any clamps, since the injunction. I think I cut more lumber last year than any time since I have run the saw. There is no difference in the working of the saw. I can see no difference in the power required. I use the same belting—no more, no less. There is no difference in the quality of the work done. The work cannot be done better in any saw in the world than I am doing on that saw. That saw has been running every day since the injunction—part of the time ten hours. There is no difference in the work since I removed the clamps and one deflector; in fact, I think it is easier. When I had the clamps on the saw and put a thick board in, and got as far as the rollers nearest the saw, if the next board was one-sixteenth of an inch thinner, I had to use both hands in adjusting the clamps and belting the thick board out. All I have to do now is to adjust the roller-bed with one hand. Since the injunction, about the same amount of work was done on the circular saw. All the two-inch lumber I had to cut with the up-and-down saw, and all the wide one and a half inch. It was too wide for the circular saw. I never could notice any difference in the amount of power required to run it with one deflector or with two deflectors and clamps. It runs at the same rate of speed. It requires no more attendance or labor. There is no differ-
265 ence in the quality of the work; some may be a little better, but nothing worth mentioning. The saw does not heat. I have taken a board § of an inch thick, 52 inches long, and resawed it in the centre—half sawed it through the centre—on this circular saw, with one deflector; have had no trouble with the saw buckling since the second deflector was taken off. There is no difference in the thickness of the kerf. I make no difference in feeding the board now from the other way, with clamps and two deflectors. I was examined in this cause before, in March, 1871. Previous to that I had been running the saw with clamps and two deflectors. At the time of my examination I had always had experience in running the saw with one deflector. I had been experimenting; my experiments consisted in taking the clamps and one deflector off. I did not know as well then as I do now; practice makes perfect. Since the injunction I had been running it steadily

without the clamps and with one deflector. Previous to the injunction I was pretty well posted on the Myers & Eunson's saw; had worked on them for years, and I knew that I had to take off one diverting-plate from Myers & Eunson's saw. When it became necessary for me to remove the clamps and diverting-plate, I worked Dunbar & Co.'s saw, as I had Myers & Eunson's, with one deflecting plate, and since that time I have got better posted in the way of running the saw, and I run it now as if I had both clamps and diverting-plates. There is not a bit of difference in running the saw now from what there was when those things were on it. I file the saw the same, and use the same set exactly as when I had the clamps and two deflecting plates.

And being cross-examined by Mr. Betts, he says:

I was examined in this cause before the hearing in court. I then described how I ran the saw with one deflecting-plate and no
266 clamps at that time. I have used the deflecting-plate on the flat side of the saw since the injunction. I had used it on both sides. I set my rollers now about the same as when I had both deflecting plates and clamps. You have to set them to throw it off on all saws a little. I do not claim to be a very skillful sawyer—only one amongst a thousand in New York.

I have a man to carry away the board. Not between the two pieces of board. I have not told anybody that since I used only one deflecting plate I spoiled nearly half the boards I put through that saw.

Q. Don't you make any difference in the adjustment of your rolls now from what you did when you used both clamps and two deflecting plates?

A. I do not. I use nothing whatever to keep the stuff from the flange side of the store. My rolls set perfectly straight with the saw; the lines are there; if Myers & Eunson's sawyer would practice with an eighteen-inch segment, he would find that out, too. My saw runs about five hundred and forty revolutions per minute. I could saw a board twenty-two inches wide with the fifty-four inch saw. The speed of feed depends upon the lumber, ordinarily about two twelve-foot planks per minute, twenty-four to thirty feet per minute; but I can (on a test, getting power enough by stopping the planing-machines) cut fifty feet per minute. I use neither of the clamps; run without clamps; feed-rollers run and operate precisely as they did before the injunction; they are geared feed-rollers; both setts are separately elastic, as before the injunction; they both feed the board right up to the saw.

And being further examined by Mr. Glassey, he says:

Redirect:

When I am running the circular saw I have to have two men with me; one passes the lumber to me and I put it through the saw, and a man behind the saw carries it away. The man who carries away
267 does precisely as before, carries away the divided board; has no other duty to perform with regard to it; has nothing to do with separating it or keeping it from the saw; he takes both sides of the divided plank under one arm and carries them away.

ANDREW PHILLIPS.

And being further cross-examined by Mr. Betts, he says:

I have made a difference in size of segments since the injunction, not in the flange. I made it a five-foot saw. We had a wooden frame, and it got shaky; the rollers got out of gear, and everything, in fact; we got

a new iron frame, and I had an eighteen-inch segment made; this was only very lately. I ran the fifty-four inch saw up to that time. We got the eighteen-inch segment about two weeks since. Prior to that time I held my roller as straight as I could keep it. I had to set my roller part of the time so to carry the saw into the board to steady it to run it straight. It will run straight without setting roller differently. With the roller straight before the eighteen inch segment, it would run so with only one deflector on.

Q. Did you not run the saw before you got the eighteen-inch segment, with one deflector, in precisely the manner which you described in your examination, before the hearing?

A. No, sir; I gave the teeth on the straight side the lead; that lead is making the teeth on that side longer than on the other. By doing that I do away with all that set on that side which there has been so much talk about. I have run this saw for the last ten months in that way.

And being further examined by Mr. Glassey, he says:

Redirect:

Fifty-four-inch saws have been used for resawing between two
268 and three years. The sawyer is the man who has charge of the machine, and has to set it. I am the man at our establishment.

ANDREW PHILLIPS.

Subscribed and sworn to before me this 16th September, 1872.

JOSEPH GUTMAN, JR.,
Master.

JOSEPH SCHMIDLIN, a witness produced and sworn on behalf of the defendants, being examined by Mr. Glassey, says:

I am engaged in the business of cutting up resawed lumber at Dunbar & Co.'s; I have been employed there ever since they were in business—fourteen or fifteen years; I know the general course of business there. I have resawed on the circular saw at their factory. I worked on that saw when it had the two dividing-plates and the clamps; I know the quality of pretty near all the work done at that time. It works just as good with the clamps, and one deflector taken off as it did before. I can't see any difference; the saw runs about the same as it did before. I use the material that is resawed. I can't see any difference in the work, as now done from what it was before the clamps and one deflector were taken off.

J. SCHMIDLIN.

Subscribed and sworn to before me this 16th September, 1872.

JOSEPH GUTMAN, JR.,
Master.

ROBERT CARNDUFF, a witness produced and sworn on behalf of the defendants, being examined by Mr. Glassey, deposes and says as follows:

I live at No. 98 Hester street, New York City. I am a box-cutter. I am employed with Dunbar & Co. I have been with them about nine years; I know the circular saw used by them for resawing. I know how it was run when it had two deflectors and two clamps. I was
269 there when the clamps and one of the deflecting-plates were taken off. I could not see any difference in the lumber sawn after that time. I cut about two-thirds of the lumber that was resawed. I prin-

cipally handle the resawn lumber. I find no difference in it now from when it was sawn on the saw with clamps and two deflectors. I told our sawyer that sometimes we get it better. The saw is used as much now as it was before those things were taken off.

And being cross-examined by Mr. Betts, he says:
I do not run the saw at all.

ROBERT CARNDUFF.

Subscribed and sworn to before me this 16th day of September, 1872.
JOSEPH GUTMAN, JR., *Master.*

JOSEPH R. LYON, a witness produced and sworn on behalf of the defendants, being examined by Mr. Glassey, deposes and says as follows:

I live in Eighteenth street, between Eighth and Ninth avenues, New York City. I am a sawyer for Shureman & Co. I have been with them two years the 3d of next January; have been a sawyer before that with Frame, in Banks street, about five years. I ran a circular saw at Frame's. It had two deflecting-plates and one clamp; the saw at Schureman's had one clamp; the one I am running now has one, and some have none at all. I have used two deflecting-plates at Schureman's before the Frame decision; after that we took them off. In my saw there is no difference in taking off the deflecting-plates, except when I am running from three to four inch timber. In cutting one-inch to inch-and-a-half stuff, up to two inches, I can run just so well without any plates at all as with one or two. I have run my saw for three months at a stretch without clamps or deflecting-plates; sometimes all day, sometimes half a
270 day. I have seen the work done by the Myers & Eunson saw with clamps and two deflectors. The difference in box and straight lumber between that and our saw is nothing; in warped lumber there is a difference, for in most instances the saw is from three to four inches from the front of the roller, and the board spring away unless it is clamped and gets its warp back. I never ran the saw with two clamps, except for six weeks. In warped boards there is no difference whether there be one or two deflectors.

And being cross-examined by Mr. Betts, he says:
Our saw is a thin, solid-plate saw, not a segment-saw.

JOSEPH R. LYON.

Subscribed and sworn to before me this 16th September, 1872.
JOSEPH GUTMAN, JR., *Master.*

Adjourned to September 20, 1872, at 12 m., at request of defendant'.
JOSEPH GUTMAN, JR., *Master.*

N. Y., *Sept.* 26, 1872—12 m.

Examination further adjourned to Oct. 1, 1872, at 12 *a.* m.
JOSEPH GUTMAN, JR., *Master.*

N. Y., *Oct.* 1, 1872—12 m.

Present, counsel for the respective parties as before.

JOSEPH STAATS, a witness produced on the part of the defendants, having been first duly cautioned and sworn to testify the truth,
271 the whole truth, and nothing but the truth, being examined by Mr. Glassey, says:

I reside at Newark, N. J. I am in the sawing business; am in the es-

tablishment of F. B. Peddie. I run one of the Roff & Huntingdon saws. When new that saw is four feet, about, probably one-half inch less; have been running that saw since August, 1865, on and off; did not run it all the time myself. That is a segment-saw. The wood is fed to the saw by four upright rollers. There are deflector-plates on it; there are two at present; it has been run with one. I ran it more or less every day with but one. I have frequently run it without either. It depends a great deal upon which deflector-plate you take off what difference there is running of the saw. If you take off the deflecting-plate on the flange side it makes no difference. I have used the same saw since 1865. It has been under my personal observation since that time. It requires no more power with one deflecting-plate than with two, because the deflector sets in under the flange; there is a hollow in the flange where the spreader sets in, consequently the flange must spread the board before the board reaches the spreader; the friction is altogether on the flange. A deflector on the side opposite the flange is of some use. In my opinion, a deflector on the side of the flange is of no use. I think when the saw gets worn the flange is a little thick. It is better without the deflector on the flange side. I don't know that it makes a great deal of difference. I have used that saw with the adjustable clamps in front of the feed-rollers; I have used it without them; I don't see that there is any difference in the use of the saw with or without the clamps. I have them set back at present so that they do not touch the board when going through. With the clamps and two deflectors the saw does not do any different work, that I have ever noticed, than it does without the clamps and with only one deflector; it does not require any more
272 power to run the saw in the absence of the clamps and one deflector; the work is just as good.

And being cross-examined by Mr. Betts, he says:

Our saw was stopped in June, 1871—I don't know whether by injunction—for three or four days. I heard that Mr. Peddie then paid $4,500 for damages and for a license-fee; the saw was then started again. I have only one way of filing and setting my saws; do not set it differently when I use only one deflector; do not set my rolls any differently. My saw, if down to a one-sixteenth gauge, takes out a scant one-eighth kerf—a very scant one-eighth—one set near the saw and one further away. On the line side of the saw the rollers have no spring; neither of them elastic; on the opposite, both rollers have separate and independent springs. I began to use the saw without clamps and with one deflecting-plate in June, 1865, when the injunction was put on. I first tried it then at the request of Mr. Roff; it was both before and after the injunction was served. I put on the deflecting-plate on the flange side when I do, because I have no other place to put it, and the saw looks a little better with it; Mr. Roff did not show me how to set the saw and file it differently at the time I made the change.

J. STAATS.

Subscribed and sworn to before me this 1st day of October, 1872.
JOSEPH GUTMAN, JR., *Master.*

JAMES HAMILTON, sworn on the part of the defendants, and examined by Mr. Glassey, says:

My business is attending to planing-mill and machinist; have been in planing-mill business some seventeen years; have experience in resawing in different places. At present I run Mr. Osborn's establishment,

corner of Columbia and Baltic streets, in Brooklyn. I have run
273 Mr. Hyde's one year, at corner of Columbia and Sedgwick streets. I am, at present, foreman at Mr. Osborn's; was with him seven years, and then went a year to Mr. Hyde's and am now back again at Osborn's. At Mr. Hyde's I used a Myers & Eunson's saw; at Mr. Osborn's I have used of late a Huntingdon saw—Roff & Huntingdon's. The difference is considerable. I don't find them to come together in any way, excepting in the flanges and blades. The Myers & Eunson saw had two deflectors, one on each side; the Huntingdon has one on the straight side of the saw-clamps; one attached to each roller *were* used on the Myers & Eunson saw. No clamps are used on the Huntingdon saw; there is a guard. I have run both these saws. I can do as good work with the Huntingdon saw as I can with the Myers & Eunson saw, in my estimation.

Q. What, if any, difference is there in the expense of running the two saws?

(Objected to; overruled; exception.)

A. It requires less power to run the saw without the deflectors; it requires the same labor. The saw works as fast without. You can make it work as fast as you have a mind to.

And being cross-examined by Mr. Betts, he says:

I ran the Myers & Eunson saw at Hyde's box-factory from the 25th of March, 1871, to March 25, 1872. His place is on Sedgwick street, near Columbia, Brooklyn. I run the Huntingdon saw at Osborn's, Brooklyn, Baltic and Columbia streets; the guards that I spoke of is a reflector placed on each side of the saw, which spreads the board. In the Huntingdon saw there are no carved pieces of metal in front of the saw; it is plain; it has four rollers. The size of the saw we use is a fifteen-
274 inch blade; the whole diameter of the saw is fifty-four inches. I always run it with one deflector and no clamps.

J. HAMILTON.

Subscribed and sworn to before me this 1st day of Oct. 1872.

JOSEPH GUTMAN JR., *Master*.

Witness JOHN DUNBAR examined on part of defendants by Mr. Glassey:

In the statement furnished by me of my receipts is contained receipts from all sources of my business. We sold lumber that was not manufactured. The receipts from such sales are included in the statement. I could not give the amount accurately. I think we sold from $7,000 to $10,000 lumber per year.

(Tax-bill shown witness.)

Q. Was that tax-bill paid?

(Objected to, as not paid until after decree.)

Q. Did you pay the taxes on the property for 1867 and 1868?

A. Yes; at time of date of bill.

Q. What were they?

(Objected to, as it appears, by the date of the bill, as not paid till December, 1871.

(Ruled out, unless it is shown to have been an expense of time prior to decree.)

Q. When did they become due?

A. 1868 and 1867.

Q. What was amount of taxes paid by you for those years 1867 and 1868?

A. $1,079.37.

(Objected to by Mr. Betts as above, it being admitted only as a statement of the amount.

Receipt offered in evidence.

275 (Objected to; overruled; exception; marked for identification, October 1, 1872. J. G., jr.)

The account put in evidence by me shows what the items are for. The pencil-writing on the account is correct to my knowledge, and explains what the items of expenditures were. Of the lumber used by us in box making, probably one-third was resawed. We generally purchase $\frac{5}{8}$, 1-inch, $1\frac{1}{4}$, $1\frac{1}{2}$, 2-inch lumber; we purchase lumber for cheapness, just as we can get it.

And, being examined by Mr. Betts, he says:

We pay for our lumber-yard $1,800 per annum—taxes and asses'ments for our lumber-yard. None of the items of the lumber-yard appear in the account.

And, being further examined by Mr. Glassey:

I think we have had the lumber-yard since 1865 or 1866 at same rent; we have paid the rent; had no lumber-yard before that.

I think the taxes are from $250 to $300; we employ labor there.

JOHN DUNBAR.

Subscribed and sworn to before me this 1st Oct., 1872.

JOSEPH GUTMAN, JR., *Master.*

ANDREW PHILLIPS, examined by Mr. Glassey, deposes and says:

I cannot run circular saw with fast feed at same time with the rest of the machinery with the engine we have. That has always been so; there is not and never has been power enough to run all the machinery at the same time. During the time I have been with Dunbar, we

276 had to cut a great deal with the up-and-down saw; that was when we had the thirty-two inch saw.

A. PHILLIPS.

Subscribed and sworn to before me this 1st October, 1872.

JOSEPH GUTMAN, JR., *Master.*

Adjourned to October 7, 1872, at 10.30 a. m.

N. Y., *Oct.* 7, 1872—10.30 a. m.

Present, Mr. Betts, counsel for complainants, and Mr. Blake, counsel for defendants.

DANIEL H. CARPENTER, produced as a witness on the part of the defendants, being first duly cautioned and sworn, and being examined by Mr. Blake, deposes and says:

My business for the last ten years has been resawing and planing. Since 1863 the market-price has been, in 1863, $2.50 per $1,000 feet, and since then it has averaged about $3 per 1,000 feet, with discount of ten to fifteen per cent. off; that was the general price; at times it was a trifle higher, but that was the price I generally charged. I referred to my books to find it out before I came here. I have been within two years past familiar with the price of horse-power. I let at $125 a horse-power per year, or where we charge by the day, fifty cents per day. This was in Bethune st., N. Y. City. I should judge it was worth from

20 to 25 cents per day more where Mr. Dunbar is—I should judge so; he is further down town. I have been in his place, and have seen his machinery, &c.

Q. What should you judge a fair rent for place occupied by circular saw at Mr. Dunbar's place?

(Objected to; ruled out; exception.)

And being cross-examined, he says:

277 The price of power I have spoken of is in cases where we let it to other persons. I do not know, of my own knowledge, the price of power in Mr. Dunbar's neighborhood.

DANIEL H. CARPENTER.

Subscribed and sworn to before me this 7th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master.

ANTHONY MILLER, a witness produced on the part of the defendants, having been first duly cautioned and sworn, and being examined by Mr. Blake, says:

I carry on business of sawing and planing in Worth street, opposite Mr. Dunbar's place; have been a sawyer twenty years; have been in that neighborhood sixteen years.

(Objection reserved, in case cost of Dunbar's power cannot be otherwise ascertained.)

I charge 70c. a day for horse-power. I let horse-power at that rate myself, for each horse-power; this is in Worth street, opposite Mr. Dunbar's place.

And being cross-examined by Mr. Betts, he says:

I don't charge per year; we charge by the day. I do not know what the average price is in other parts of the city. I have heard that they charge 50c. up town. I charge more because it is down town. I don't know why it should cost more down. I don't think I have much profit in charging 70c.; there might be a little, I don't know how much. We hire the place. I hire horse-power myself. I think it costs pretty near that to run my engine. I think I don't make much on it. What I don't use I let out.

278 And being further examined by Mr. Blake, he says:

We burn shavings and saw-dust.

ANTHONY MILLER.

Subscribed and sworn to before me this 7th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master, &c.

JOHN TODD, a witness produced on the part of the defendants, being first duly cautioned and sworn, and being examined by Mr. Blake, says:

My business is packing-box making. I have carried on the business about seven years in New York for myself, and about twelve as foreman in a box-maker's establishment. During the past seven years I have been paying $3 per 1,000 feet for resawing; 10 to 15 per cent. off.

And being cross-examined, he says:

Barnard resaws a great deal for me; the Grand-street mill does it also for me; also, Peel & Bogart; Schumann resaws for me also. They

all charge the same price. Barnard charges me $3.00. He has not to my knowledge charged me $3.25.

JOHN TODD.

Subscribed and sworn to before me, this 7th day of October, 1872.
JOSEPH GUTMAN, JR.,
Master, &c.

ANDREW PHILLIPS recalled, and examined by Mr. Blake:

After we got the 54-inch saw, I should think about one-fourth of our resawing was done by the up-and-down saw, three-fourths by the circular saw.

ANDREW PHILLIPS.

Subscribed and sworn to before me this 7th day of October, 1872.
JOSEPH GUTMAN, JR.,
Master, &c.

279 Mr. Blake again calls Mr. Phillips as a witness.

Recalling of Mr. Phillips objected to by Mr. Betts, as the testimony has been closed, excepting further examination of Mr. Dunbar.

Under the objection the master rules that he has no power to abrogate the terms of the stipulation heretofore made closing the proofs, excepting so far as the examination of Mr. Dunbar is concerned; that the recalling of Mr. Phillips on the question of the books would be a re-opening of that branch of the case.

Mr. Blake claims the right to recall the witness to testify that he kept the books, Exhibits B and C, in this cause produced by Mr. Dunbar, and that said books contain the statement of all the resawing done by all the saws in Dunbar's establishment, the purpose of the offer being to corroborate Mr. Dunbar's correction of an error on the record of his testimony, which error came only to his knowledge since the last meeting in this cause, and he therefore objects to the ruling of the master as unlawful, and as a practical denial of justice.

The master overrules Mr. Blake's requirement, on the ground that the witness has fully testified on this point. He further notifies Mr. Blake that, if he is desirous of doing so, the master is ready to afford Mr. Dunbar himself every opportunity to correct any error in his testimony, *the record of* there being nothing as yet from Mr. Dunbar requiring corroboration. Mr. Betts consents that Mr. Phillips be examined, and Mr. Phillips, being further examined by Mr. Blake, says: I kept the books, Exhibit B and C. They contain an account of all the lumber resawed by Mr. Dunbar in Worth street up to the time of the injunction; that is, the resawing on both saws.

And being cross-examined by Mr. Betts, he says:

280 I can't tell what proportion of the lumber averaged over thirteen inches wide; maybe $\frac{2}{3}$, may be $\frac{1}{2}$, I don't know; lumber does not generally come about twelve inches wide. A good deal of our $\frac{5}{4}$-inch lumber is over thirteen inches wide. I cannot tell exactly. I should think more than one-half. We have not run our up-and-down saw every day. I run it when I have lumber that I have to resaw with it. I have to resaw with it the wide $1\frac{1}{4}$ inch, wide $1\frac{1}{2}$ inch. All our 12 inches, and for all two-inch lumber through the center—that is, previous to the injunction—I resawed all the 2-inch and wide $1\frac{1}{2}$-inch on it before the injunction; and all the inch a quarter that was too wide for the circular; $\frac{1}{4}$ or $\frac{1}{3}$ of this latter might have been too wide for the circular saw; the wide $1\frac{1}{2}$ and wide $1\frac{1}{4}$ inch probably were about one-quarter of

what was too wide, as last stated by me. I have resawed 2-inch lumber on the circular saw sided up into thin stuff, and taking the deflecting-plate off. I might average six or seven hours a day with the circular saw before the injunction. If I file up the circular saw, as I have done several times on striking a nail—that is about an hour and a half's work—I might average on the up-and-down saw, before the injunction, half a day through. In the winter-time, in the cold weather, it would not average four hours a day the year through. In the fall and winter, 1½-inch and 2-inch lumber is a good deal of our business. In the summer-time we made a pile of the lumber, and ran, maybe, one or two days in the week. Did not average through the year 3 hours a day. Cannot say whether it ran on an average two hours. I would not swear that I averaged more than two hours a day on the up-and-down saw.

Q. You stated that prior to the injunction you averaged six or seven hours a day on the circular saw; which was it?

A. I wish to make an explanation. If I strike a nail, it takes me about an hour and a half to round the saw off and to file it up,
281 and if I should do that, as I have done three or four times a week some periods, you might call that the running of the saw. I understand it as such.

Q. In making your average of the up-and-down saw, do you include the time of filing, etc.?

A. Yes; I can file the up-and-down saw in about fifteen minutes. I will not swear that I averaged one hour and a half a day the year through with the up-and-down saw, cutting lumber, for if I did, I would have exceeded my working hours, and I never work over my proper time.

Q. Will you swear that you averaged an hour a day on the up-and-down saw prior to the service of the injunction?

A. Yes, sir; I averaged between four, five, six, and seven hours on the circular saw; I cannot tell exactly. I am under oath, and do not like to swear without I know. I have seen me file four hours in the day by hitting nails. Since 1863 my working hours have been from 7 a. m. to 5.30 p. m., with half an hour intermission for dinner. I can saw about 1,000 feet an hour with a slow feed on circular saw; if I stop the planing-machines, as I have done to try the saw, I think I resawed 3,200 feet in an hour and a half—that was with all the other machines off. All the circular saws we had had the same feed.

And being further examined by Mr. Blake, he says:

I usually run the circular saw at rate of 1,000 feet per hour; the averages I have spoken of relate all the way through; we had the same feed motion. When we had the thirty-two inch saw, we ran the up-and-down saw more than when we had the fifty-four inch saw. The average times I have spoken of relate to all the circular saws we had, no matter what the sizes. We cannot cut thick lumber with the circular saw, because it takes too much power, therefore we use the up-and-down saw for it. The segments were taken off the circular saw twice a year.
282 We would have them reground; that would take two or three days, and we would then have to run the up-and-down saw steady.

ANDREW PHILLIPS.

Subscribed and sworn to before me this 7th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master, &c.

Witness JOHN DUNBAR further examined by Mr. Blake:

Q. Please read from the minutes what purports to be your statement in regard to Exhibits B & C, and say what you have to say in regard to that record.

(Objected to, for the reason that Exhibits B & C are the statements furnished by the witness in accordance with the requirements of the master for a statement of the resawing done upon the infringing machine, and sworn to by him as the amount of resawing done by the machine in suit, upon which the accounting has proceeded and been founded up to this time.

Counsel for defendants replies that these books were produced pursuant to an order requiring defendants to produce your books, showing the amount of lumber purchased by you for the purpose of making up into boxes; also, the amount of lumber resawed by you, and the amount received therefor, and offer said order in evidence.

Admitted by master; exception.)

A. Witness reads as follows: "The books I now produce contained statements of the amount of resawing done by me on this saw in this suit." I don't see how I could have made that statement, because I did not keep the books containing the account of resawing done by us, and therefore did not know anything about it. The entries in those
283 books contain the whole amount of resawing done on both the machines, as I understand it. Dunbar & Co. have no other book containing the amount of resawing done on these books. I sometimes make out the bills, sometimes others. I have general financial management of the concern.

We have been paying Mr. Phillips $25 per week; the pay-roll book shows $20 per week. The other $5 is in the petty cash account. It is mixed up there with other items. I find that he was paid at first $13.50 per week.

(Counsel for defendants will furnish a detailed statement of the amount paid to the sawyer, Phillips.)

Our resawing has all been done by ourselves, not for other customers. The buildings cost, as I think, over $5,000. I am pretty certain they did.

Our first circular saw cost us about $300 to $350.

We could have had resawing done cheaper than we charged the business.

(Card of Peek & Bogart offered in evidence, marked Exhibit Oct. 7, 1872.)

I did not keep posted as regards the market-price of resawing all the time; that card contained their prices in 1867.

And being further cross-examined by Mr. Betts:

Q. On the day that you produced Exhibits B and C, and put them in evidence, Mr. Phillips was with *with* you, was he not, brought the books down, and produced them when called for?

A. I cannot say; I don't remember his being with me and bringing the books.

JOHN DUNBAR.

Subscribed and sworn to before me this 7th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master, &c.

284 Case for defendants closed, except as to examination of witness Renwick by Mr. Blake.

Examination on part of complainants adjourned to Oct. 17, at 11 a. m.

N. Y., *Oct.* 17, 1872—11 a. m.

Present, counsel for the respective parties.

Counsel for defendants offers in evidence the statement of amounts paid to Mr. Phillips, the sawyer referred to at the last meeting, and by Mr. Dunbar and Mr. Phillips, both present, offers to prove that it is correct.

(Objected to by Mr. Betts, on the ground that the testimony has been closed by stipulation, except as to Renwick' deposition, but is willing to allow it to go before the master.)

(Ruled out by master; exception.)

Counsel for defendants offers in evidence the deposition of Henry B. Renwick, taken October 11, 1872, which is hereto annexed, together with the Throckmorton patent, forming part thereof.

285 U. S. circuit court, southern district of New York. In equity.

MARGARET MYERS, ADMINISTRATRIX, &C., ET AL.,
vs.
JOHN DUNBAR ET AL.

HENRY B. RENWICK, of the city of New York, being duly sworn, deposes and says that he has this day, at the factory of John Dunbar, in Ninth street, in the city of New York, examined the machine for resawing boards, at use in said factory, which has a circular saw, there being in the same factory a slitting or resawing machine, with a reciprocating saw.

Deponent further saith that the machine examined by him has a saw made of segments, bolted on to a centre boss, two sets of feed-rollers, two in each set, a deflectory plate on one side of the saw only, and a spreading wedge behind the saw; that one roller in each set is pressed towards the other by India-rubber springs, and that each of these pressing-rollers is independent of the other, so that a thick board may be passed between the two rollers furthest from the saw; and a thinner board between the two rollers nearest the saw, or vice versa, and that each and every one of these feed and griping rollers is forced to revolve by power.

This machine has no apparatus of any kind which bears upon the outside of the board after it has passed the pair of feed and griping rollers nearest the saw, and the board is therefore directed to the saw and held in proper vertical position to be resawn or slit by these feed and griping rollers only.

286 Deponent has this day, and heretofore, examined carefully letters-patent of the United States, granted to Reid R. Throckmorton May 1st, A. D. 1845, in which is described a machine for performing various operations upon boards, and several modifications of the complete machine.

In the machine there is a circular saw mounted upon a boss, and four feed and griping rollers to feed the board along and direct it vertically to the saw or in the proper vertical planes. These rollers are in two sets and are all four forced to revolve by power; one roller in each set is forced toward the other by means of rods, levers, and weights; and the construction is such that a thin board can be griped between the set furthest from the saw and a thicker board between the set or two roll-

ers nearest the saw or vice versa; and as all four of the rollers are forced to move, two boards of different thickness can be fed by the machine at the same time. These Throckmorton rollers are in position with relation to each other and the saw, in construction and in mode of operation, and capacity to produce certain effects, identical in each and all respects with the rollers seen by deponent this day at the factory (box-factory) of John Dunbar, the sole formal difference being that the the pressure-rollers of Dunbar are forced toward the board by springs and those of Throckmorton by weights.

Among the various modifications of the Thorckmorton machine described in the patent, is one in which it is stated that various parts of the complete machine may be removed so as to connect the machine into a slitting or resawing machine. The statement in the patent is as follows:

"By using the veneer-saw and finishing-wheel in combination with the feeding-rollers and gearing only, this machine will be useful for ripping boards and plank edgeways, so as to make two pieces out of one, which is commonly done by the up-and-down saw. If done in this way one piece will be planed as well as sawed at one operation and with great speed."

287 When so changed, the machine will resaw boards as the present John Dunbar machine does, and plane one side of one of the pieces at the same time, the slitting or resawing part of the contrivance being the same substantially as that now used by John Dunbar, and will differ from the said Dunbar machine in having no deflector on one side of the saw and no spreader behind the saw, and also in having a finishing-wheel, which is not in the Dunbar machine, to plane one side of one of the pieces into which the plank or board is slit by the saw. Depodent is familiar with resawing machinery, with planing, edging, and grooving machinery, and has no doubt that the Throckmorton machine, constructed as described and exemplified by the drawing, would be a good, effective machine; and when the Throckmorton patent calls the saw a "veneer-saw," it describes just such a saw as is used by John Dunbar. The drawings of the patent do not show the segments, but they do show a boss to strengthen a saw, and to which segments might be bolted.

HENRY B. RENWICK.

Sworn to before me this 11th day of October, 1872.
[L. S.] GEORGE M. VAN HOSEN,
Notary Public City and County of New York.

OCTOBER 29, 1872.

JOHN DUNBAR recalled, and, being further examined by Mr. Glassey, deposes and says as follows:

I heard the testimony of Mr. Eunson, given in rebuttal. I remember his statements as to difference in machine now used by us, and that used prior to June, 1871. He was incorrect as to the size of the rollers, also as to the saw being nearer to the rollers. I have measured the rollers on the present machine with a pair of callipers; also on

288 the old one. This new machine has the rollers $\frac{1}{16}$ of an inch larger than the rollers on the old machine. There is no difference as to the springs. There is no difference that I know of in the manner of adjusting the rollers. The front roller, the roller nearer the saw, is perfectly stationary; the roller next to that is adjustable with a screw at the bottom; the saw is no nearer the rollers.

And being further cross-examined by Mr. Betts:

I mean by stationary that it is fast; cannot be moved in the frame. I would not say, not in any direction. I was informed by Mr. Phillips that it was fast; I did not investigate that myself. Mr. Phillips could testify to that. I do not know how we regulate the *guage* if the front roller is fast. I do not know whether it is an impossibility. I am not a practical man.

Q. Can you imagine any possible way of regulating the *guage* on that machine if the front roller on the flat side is fast?

A. I can't answer that question. I will produce witnesses that can.

JOHN DUNBAR.

Subscribed to before me this 29th day of October, 1872.

JOSEPH GUTMAN, JR.,
Master, &c.

Adjourned to November 7, 1872, at 11 a. m., for summing up.

Adj'd to Nov. 11, 1872, at 11 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *Nov.* 11, 1872—11 a. m.

Adj. to Nov. 15, 1872, at 11 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *Nov.* 15, 1872—11 a. m.

Further adj'd, per agmt., to Nov. 21, 1872, at 11 a. m.

JOSEPH GUTMAN, JR.,
Master.

N. Y., *Nov.* 21—1872, 11 a. m.

Further adj'd, per agmt., to Nov. 22, 1872, at 11 a. m.

JOSEPH GUTMAN, JR.,
Master.

289 *Andrew Phillips.*

1863.				Pay.
July	3.	Pay—Paid	.....	11 25
"	13.	" "	.....	13 50
"	20.	" "	.....	9 00
"	27.	" "	.....	11 25
Au't	1.	" "	.....	9 00
"	8.	" "	.....	9 00
"	13.	" "	.....	13 50
"	22.	" "	.....	12 38
"	29.	" "	.....	10 13
Sept.	5.	" "	.....	9 00
	12		.....	13 50
	19		.....	13 50
	26		.....	12 38
Oct.	3		.....	13 75
	8		.....	11 50

	17	13 50	
	24	13 50	
Oct.	31	15 00	
Nov.	7	15 00	
	14	15 00	
	21	18 00	
	28	12 50	
Dec.	5	15 00	
	12	15 62	
	19	16 28	
	26	15 00	
	31	12 50	
1864.			
Jan.	9	15 00	
	16	15 75	
	23	15 00	
	30	15 00	
Feb.	6	15 00	
	13	15 00	
	20	15 00	
	27	15 00	
March	5	15 00	
	12	15 00	
	19	15 00	
		515 29	515 29

290

1864.			
	March 26	15 00	
April	2	15 00	
	9	15 00	
	16	15 00	
	23	15 00	
	30	15 00	
May	7	15 00	
	14	17 55	
	21	16 50	
	28	16 50	
June	4	16 50	
	11	16 20	
	18	16 50	
	25	16 50	
July	2	16 50	
	9	11 00	
	16	16 00	
	23	00 00	
July	30	16 50	
Aug.	6	16 65	
	13	18 34	
	20	16 50	
	27	16 50	
Sept.	3	18 34	
	10	18 17	
	17	16 50	
	24	16 50	
Oct.	1	16 50	
"	8	18 34	

	15		16 50	
	22		16 50	
	29		16 50	
Nov.	5		16 50	
	12		16 67	
	19		15 50	
	26		16 67	
Dec.	3	586 73	16 50	
			1,102 12	1,102 12
291	1864.			
	Dec. 10		16 50	
	17		16 50	
	24		16 50	
	31		16 67	
	1865.			
Jan.	7		13 34	
	14		16 50	
	21		16 50	
	28		16 50	
Feb.	4		16 50	
	11		16 50	
	18		16 50	
	25		16 67	
March	4		16 50	
	11		16 50	
	18		16 50	
	25		16 50	
April	1		16 50	
	8		16 50	
	15		16 50	
	22		13 34	
	29		13 34	
May	6		20 00	
	13		20 00	
	20		18 34	
	27		20 00	
June	3		16 67	
	10		16 67	
	17		20 00	
	24		20 00	
July	1		20 00	
	8		10 00	
	15		20 00	
	22		20 00	
	29		20 00	
Aug.	5		20 00	
	12		20 00	
	19	$639 04	20 00	
			1,741 06	1,741 06
292	1865.			
			1,741 06	
Aug.	26		20 00	
Sept.	2		20 00	
	9		20 00	
	16		20 00	

	23		20 00	
	30		20 00	
Oct.	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
Nov.	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
Dec.	2		20 00	
	9		20 00	
Dec.	16		20 00	
	23		20 90	
	30		20 00	
	1866.			
Jan.	6		20 00	
	13		20 00	
	20		20 00	
	27		20 00	
Feb.	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
March	3		20 00	
	14		20 00	
	17		20 00	
	24		20 00	
	31		20 00	
April	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
May	5	$740 00	20 00	
				2,481 06
293	1866.		2,481 06	
	May 12		20 00	
	19		20 00	
	26		20 09	
June	2		20 00	
	9		20 00	
	16		20 00	
	23		20 00	
	30		20 00	
July	4		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
Aug.	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
Sept.	1		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	

Oct.	6		20 00	
	13		20 00	
	20		20 00	
	27		20 00	
Nov.	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
Dec.	1		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
	1867.			
Jan.	5		20 00	
	12		20 00	
	19	740.00	20 00	
				3,221 06
294	1867.		3,221 06	
	Jan. 26		20 00	
Feb.	2		20 00	
	9		20 00	
	16		20 00	
	23		20 00	
March	2		20 00	
	9		20 00	
	16		20 00	
	23		20 00	
	30		20 00	
April	6		20 00	
	13		20 00	
	20		20 00	
	27		20 00	
May	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
June	1		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
July	6		20 00	
	13		20 00	
	20		20 00	
	27		20 00	
Aug.	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
	31		20 00	
Sept.	7		20 00	
	14		20 00	
	21		21 67	
	28		20 00	
Oct.	5	$741.67	20 00	
				3,962 73

295	1867.		3,962 73	
	Oct. 12		20 00	
Oct.	19		20 00	
	26		20 00	
Nov.	2		20 00	
	9		20 00	
	16		20 00	
	23		20 00	
	30		20 00	
Dec.	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
	1868.			
Jan.	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
Feb.	1		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
March	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
April	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
May	2		20 00	
	9		20 00	
	16		21 10	
	23		20 00	
	30		20 00	
June	6		20 00	
	13		20 00	
	20	$741.10	20 00	
				4,703 83
	1868.		4,703 83	
296	June 27		20 00	
	July 4		20 00	
July	11		20 00	
	18		20 00	
	25		20 00	
Aug.	1		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
Sept.	5		20 00	
	12		20 00	
	19		20 00	
	26		20 00	
Oct.	3		20 00	

	10		20 00	
	17		20 00	
	24		20 00	
	31		20 00	
Nov.	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
Dec.	5		20 00	
	12		20 00	
	19		20 00	
	26		20 00	
	1869.			
Jan.	2		20 00	
	9		20 00	
	16		20 00	
	23		20 00	
	30		20 00	
Feb.	6		20 00	
	13		20 00	
	20		20 00	
	27		20 00	
March	6	$740.00	20 00	
				5,443 83
297	1869.			
	March 13		5,443 83	
March	20		20 00	
	27		20 00	
April	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
May	1		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
June	5		20 00	
	12		20 00	
	19		20 00	
	26		20 00	
July	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
	31		20 00	
Aug.	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
Sept.	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
Oct.	2		20 00	
	9		20 00	

	16		20 00	
	23		20 00	
	30		20 00	
Nov.	6		20 00	
	13		20 00	
	20	$740 00	20 00	
				6,183 83
298	1869.		6,183 83	
	Nov. 27		20 00	
Dec.	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
1870.				
Jan.	4		20 00	
	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
Feb.	5		20 00	
	12		20 00	
	19		20 00	
	26		20 00	
March	5		20 00	
	12		20 00	
	19		20 00	
	26		20 00	
April	2		20 00	
	9		20 00	
	16		20 00	
	23		20 00	
	30		20 00	
May	7		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
June	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
July	2		20 00	
	9		20 00	
	16		30 00	
	23		20 00	
	30		20 00	
Aug.	6	$740 00	20 00	
				6,923 83
299	1870.		6,923 83	
	Aug. 13		20 00	
Aug.	20		27 50	
	27		30 00	
Sept.	3		27 50	
	10		32 50	
	17		30 00	
	24		33 00	
October	1		20 00	

	8		20 00	
	15		20 00	
	22		20 00	
	29		20 00	
Nov.	5		20 00	
	12		20 00	
	19		20 00	
	26		20 00	
Dec.	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
	31		20 00	
1871.				
Jan.	3		20 00	
	14		20 00	
	21		20 00	
	28		20 00	
Feb.	4		20 00	
	11		20 00	
	18		20 09	
	25		20 00	
March	4		20 00	
	11		20 00	
	18		20 00	
	25		20 00	
April	1		20 00	
	8		20 00	
	15		20 00	
	22	$800 50	20 00	
			7,724 33	7,724 33
300	April 29		20 00	
	May 6		20 00	
May	13		20 00	
	20		20 00	
	27		20 00	
June	3		20 00	
	10		20 00	
	17		20 00	
	24		20 00	
July	1	$200 00	20 00	
				7,924 33

(Endorsed:) C. C. U. S. S. D. N. Y. In equity. Margaret Meyers, executrix, &c., et al. vs. John Dunbar et al. Evidence taken before master on accounting under decree. Jos. Gutman, jr., master, &c. Filed May 5, 1874.

301 Circuit court of the United States for the southern district of New York, in equity.

MARGARET MYERS, EXECUTRIX OF JOHN DUNBAR, deceased, and Eugene S. Eunson,
vs.
JOHN DUNBAR AND JEREMIAH HOPPER.

To the honorable the judges of the circuit court of the United States for the southern district of New York:

I, Joseph Gutman, jr., the master appointed by the interlocutory de-

cree herein to take and state the account of the profits received by the defendants by reason of the infringement of the letters-patent of the complainants, set forth in the bill, do find and report as follows:

302 I have been attended by the respective parties and their counsel, and have heard and considered the proofs and allegations adduced, and the arguments of the respective counsel thereupon, and I have also visited the establishment of the defendants and witnessed the operation of their resawing-machine.

As matters of fact, I do find and report—

1st. That from July, 1863, to June, 1871, the defendants, John Dunbar and Jeremiah Hopper, were engaged in the business of resawing boards with a resawing-machine consisting of a circular saw with a roller-feed, containing and embodying the inventions of the patent of the complainants, and which machine was during said period practically run because of and by means of the use of said inventions.

2d. That the amount of all the resawing done in the establishment and the amount received therefor, as taken from the books, Exhibits B and C, was as follows:

1863, (6 months)	517,867	feet	$1,444 93
1864.....	667,674	"	2,162 35
1865.....	1,156,645	"	4,249 85
1866.....	940,875	"	4,117 87
1867.....	842,840	"	3,208 42
1868.....	1,191,850	"	3,807 22
1869.....	1,015,507	"	3,092 23
1870, (first 6 mos.) ...	597,900	"	1,793 70
1870, (last 6 mos.) ...	533,550	"	1,600 65
1871.....	608,636	"	1,825 90

The Exhibit C does not show the said sums of $1,600.65 and $1,825.90 to have been received for resawing done during the last six months of 1870 and during 1871, but for those periods shows simply the number of feet resawed. The evidence of the defendant having shown that

303 $3.00 (three dollars) per thousand *ef*et was his usual charge for resawing, I have taken those as the prices received during those periods.

It was proven by the evidence before the decree in this case, and adduced on the accounting before me, that the circular saw ran five or six times faster than the up-and-down saw, and it appears from the testimony of defendants' witness, (the sawyer who did the resawing from July, 1863, to June 1, 1871,) that the circular saw averaged five and one-half (5½) hours per day, and the up-and-down saw one hour per day. I conclude, therefore, that the up and down saw has done one-twenty-fifth (1-25) of the resawing done, as shown in said Exhibits B and C, and the infringing saw the balance, and that the amount of resawing done by the infringing saw and the amount received therefor was as follows:

1863.....	497,153	feet	$1,406 34
1864	640,697	"	2,075 86
1865.....	1,110,380	"	4,074 86
1866.....	903,240	"	3,953 16
1867.....	809,127	"	3,078 17
1868.....	1,144,176	"	3,664 54
1869.....	974,887	"	2,968 55
1870, (first 6 mos.)	573,984	"	1,721 96
1870, (last 6 mos.)	512,208	"	1,536 63
1871.....	584,291	"	1,752 87

3d. The amount of expense incurred by defendants in running said machine and receiving such amounts (except wages of sawyer, added hereafter) was as follows:

1863.			
Two laborers	$250 00		
Power	191 60		
Rent	23 31		
Oil	2 00		
Repairs	12 50		
Belting	5 00		
304 Segments	34 00		
" grinding	7 50		
Interest on saw	31 50		
Depreciation	22 50		
Insurance	18 00		
			$597 91
1864.			
Two laborers	$500 00		
Power	383 20		
Rent	47 65		
Oil	4 00		
Repairs	$25 00		
Belting	10 00		
Segments	68 00		
" grinding	15 00		
Interest on saw	63 00		
Depreciation	45 00		
Insurance	36 00		
			$1,196 55
1865.			
Two laborers	$500 00		
Power	383 20		
Rent	50 44		
Oil	4 00		
Repairs	25 00		
Belting	10 00		
Segments	68 00		
" grinding	15 00		
Interest on saw	63 00		
Depreciation	45 00		
Insurance	36 00		
			$1,199 64
1866.			
Two laborers	$500 00		
Power	383 20		
Rent	54 09		
Oil	4 00		
Repairs	25 00		
305 Belting	10 00		
Segments	68 00		
" grinding	15 00		
Interest on saw	63 00		
Depreciation	45 00		
Insurance	36 00		
			$1,203 29

1867.		
Two laborers	$500 00	
Power	383 20	
Rent	57 29	
Oil	4 00	
Repairs	25 00	
Belting	10 00	
Segments	68 00	
" grinding	15 00	
Interest on saw	63 00	
Depreciation	45 00	
Insurance	36 00	
		$1,206 49
1868.		
Two laborers	$500 00	
Power	383 20	
Rent	45 11	
Oil	4 00	
Repairs	25 00	
Belting	10 00	
Segments	68 00	
" grinding	15 00	
Interest on saw	63 00	
Depreciation	45 00	
Insurance	36 00	
		$1,194 31
1869.		
Two laborers	$500 00	
Power	383 20	
Rent	45 14	
Oil	4 00	
306 Repairs	25 00	
Belting	10 00	
Segments	68 00	
" grinding	15 00	
Interest on saw	63 00	
Depreciation	45 00	
Insurance	36 00	
		$1,194 34
1870.		
Two laborers	$500 00	
Power	383 20	
Rent	45 14	
Oil	4 00	
Repairs	25 00	
Belting	10 00	
Segments	68 00	
" grinding	15 00	
Interest on saw	63 00	
Depreciation	45 00	
Insurance	36 00	
		$1,194 34
1871, (to June 1.)		
Two laborers	$208 33	
Power	159 67	
Rent, (including proportion of taxes of 1867-'68)	43 64	

Oil	1 67	
Repairs	10 42	
Belting	4 16	
Segments	28 33	
" grinding	6 25	
Interest on saw	26 25	
Depreciation	18 75	
Insurance	15 00	
		$522 47

307 The items of expense claimed by the defendants were conceded by the complainants excepting the charges for wages of sawyer, the cost of power, rent, and interest on saw.

1st. As to sawyer's wages:

The sawyer's wages I have allowed as stated in the account of wages of the sawyer made up by the defendants from their books, which I have annexed to the evidence adduced before me. That account fixes the amount paid to the sawyer during the period in question at seven thousand nine hundred and twenty-four dollars and thirty-three cents, ($7,924.33,) but as 1-25th of the resawing done by him is allowed to have been done with the up-and-down saw, carry out the same proportion in the matter of wages, which would make the amount paid him for resawing with the circular saw the sum of $7,607.36.

2d. As to the item of rent:

The item of rent chargeable against the infringing machine I have computed by apportioning the whole rent of the defendants' premises according to the available space occupied by the machine, and requisite for its proper operation, as compared with the remainder of the space of equal value, and used by the defendants in their business. In doing this I have treated the first and second floors of the building as of equal value for the purposes of the defendants' business, and the third floor and basement as together equal to one floor, and have computed the rent of the whole building by adding together in each year the ground-rent, taxes, assessments, and water-rates paid, and twelve per cent. interest on the value of the building erected by the defendants.

I find therefrom the rent paid in each year to be as follows:

1863	$1,864 70	½	$932 35
1864			1,906 25
1865			2,017 50
308 1866			2,163 97
1867			2,291 81
1868			1,804 30
1869			1,805 90
1870			1,805 90
1871, (rent 5 mos., $666.66, and $1,079.37, taxes of 1867 and 1868 paid in 1871)			1,746 03

The one-fortieth (1-40) part of this is properly chargeable to the infringing saw, giving for the respective periods the amounts hereinbefore allowed under the item of rent.

3d. As to the cost of power:

The cost of power for running the resawing machine I have computed by calculating the cost of the power required to run all the machinery in the establishment, and apportioning to the infringing saw the quantity required to run it, namely, eight horse-power.

I allow, as elements of cost for power:
1st. Wages of engineer.
2d. Wages of boy.
3d. Fuel.
4th. Twelve per cent. on cost of engine, to cover wear and tear, and repairs.

The item of fuel I have averaged from the evidence given of the fuel purchased between July 17, 1863, and September 4, 1863, and assuming that a proportionate amount was required during the remainder of the period in question, it would make an annual expense for fuel of $550.

4th. As to interest on saw:

The item of interest I have allowed; it is included in the above account of expense.

309 *Summary.*

Wages of sawyer from July, 1863, to June, 1871, less amount charged to up-and-down saw as above	$7,607 36
1863, expense as per above statement	597 91
1864	1,196 85
1865	1,199 64
1866	1,203 29
1867	1,206 49
1868	1,194 31
1869	1,194 34
1870	1,194 34
1871	522 47
	$17,117 00

I do therefore find that during the period in question—

The gross receipts were	$26,237 94
And the expenses	17,117 00
And the profits	$9,120 94

And I report said sum of nine thousand one hundred and twenty dollars and ninety-four cents to be the amount of profits made by the said defendants on the said infringing machine, to which the complainants are entitled on this accounting.

It was contended before me by the defendants, and I am asked by them to find, that the complainants are not entitled to any of the profits realized by the defendants on the infringing machine between July, 1863, and June, 1871, because since June, 1871, it has been ascertained that the infringing machine can be run with equal advantage and profit by merely leaving off one of the deflecting-plates and both of the clamps of said machine.

310 On that subject I find, as matter of fact, that no such machine was known or discovered, or open to the public, or to the defendants, or used by them during the time when the said profits were realized and received by the defendants from the use of the invention in suit.

All which is respectfully submitted.

Dated N. Y., February 4, 1873.

JOSEPH GUTMAN, JR.

(Endorsed:) C. C. U. S. S. D. of N. Y. Margaret Myers, executrix, &c., et al. vs. John Dunbar et al. Report of master on accounting under decree. Report confirmed May 5, 1874. S. B. Filed July 17, 1873.

311 Circuit court of the United States, southern district of New York.

MARG'RET MYERS ET AL
vs.
JOHN DUNBAR ET AL.

Exceptions by and on the part of the complainants to the report of the master awarding $9,120.00 on behalf of complainants.

First exception.—The complainants except to the said report of said master, for that said master has omitted to charge the said defendants with interest on the amount of profit realized and received by them, whereas the said master should have charged to the defendants and awarded to the complainants interest on the profits received from the end of each year, when the same were received.

312 Second exception.—The complainants except to the said report of said master, for that said master has omitted to charge the defendants and award to the claimants the amount received by the defendants from the sale of saw-dust made by the infringing saw.

Third exception.—The complainants except to the said report, because the said master has found that any part of the sawing specified in the Exhibits R & C was performed by any saw other than the infringing saw.

Fourth exception.—The complainants except to the said report of said master, because the said master allowed certain sums specified in said report for interest on the saw, and for depreciation, whereas, in fact, said master should not have allowed any sums for said interest or depreciation, or, if allowed, should have only allowed a smaller sum.

Fifth exception.—The complainants except to the said report of said master, because the said master allowed to the defendants payments for taxes, assessments, &c., of 1867 to 1868, to the amount of $1,079.37, which said amount was not paid until after the period of the accounting closed.

WHITNEY & BETTS,
Complainant's Solicitors.

FREDERIC H. BETTS,
Counsel.

(Endorsed:) U. S. circuit court, S. D. of N. Y. Margaret Myers et al. vs. John Dunbar et al. Excepts. of complats. to the master' report. Whitney & Betts, complts.' sols. Exceptions overruled May 5th, 1874. Filed Feb'y 24th, 1873.

313 U. S. circuit court, southern district of New York. In equity.

MARGARET MYERS, ADM*rs*' &C., AND EUGENE S. EUNISON, complainants,
agst.
JOHN DUNBAR AND JEREMIAH HOPPER, defendants.

Exceptions by deft. to master's report on accounting.

The above-named defendants except to the findings and conclusions

contained in the report of Joseph Gutman, jr., esq., the master to whom it was referred to take account, &c., filed February, 1873, as follows:

1. They except to so much of the first finding of fact as recites that the defendants were at any time engaged in the business of resawing boards, and to his omission to find that they were engaged in the business of box-making, in which they used the machine in question and did not do resawing for others.

2. They except to so much of the said first finding as recites that said machine was during said period practically run because of and by
314 means of said inventions; "and to his omissions and refusal to find that said machine always could be run and used as well without as with the said inventions."

3. They except to the second finding of fact for that it finds as a basis for estimating the profits derived from the use of the infringing machine all the resawing done in the defendants' establishment, instead of the amount actually performed on the machine in question, and to his finding that any more resawing was done on said machine than as follows:

4. In 1863, six months	258,933½	feet.
In 1864	333,839	feet.
In 1865	578,222½	feet.
In 1866, first six months	235,219	feet.
In 1866, last " "	313,625⅓	feet.
In 1867	561,893	feet.
In 1868	794,566	feet.
In 1869, first six months	338,836	feet.
In 1869, last " "	381,190	feet.
In 1870	850,623	feet.
In 1871, five months	456,477	feet.

5. They except to the finding that defendants received any of the moneys stated in said second finding; and to the finding that $3.00 per 1,000 feet was defendants' usual charge for doing such work, and to the charge against said defendant, for work done on said machine, of any other or greater sum than the average price of resawing, which was proved to be $2.75 per 1,000 feet.

6. They except to the findings contained in the said second finding, that the circular saw ran five or six times faster than the up-and-down saw, and that the circular saw averaged five and a half hours per day and the up-and-down saw but one hour, and that the up-and-down saw did but one twenty-fifth of the work, and the infringing saw the balance; and to the finding that the infringing machine did any more of the resawing than as stated above.

315 7. They except to the said master's finding contained in his third finding of fact, as to expenses of running the said machine, in the following respects:

1st. For that he has allowed as rent but $432.61, whereas he should have allowed $602.40.

2d. For that he has allowed, as cost of power, but $2,682.40, whereas he should have allowed $6,060.

8. They except to the finding of said master to the effect that "no such machine was known or discovered or opened to the public, or to the defendants, or used by them during the time when the said profits were realized and received by the defendants from the use of the machine in suit."

9. They except to said master's refusal to find, as requested by de-

fendants, that thirty-four hundredths of the resawing done by defendants during the period covered by the decree was done on the up-and-down saw, and not upon the circular saw, and that the work done on the circular saw did not exceed 5,280,468 feet, or thereabouts.

10. They except to the said master's refusal to find, as requested, that the value of the work done could not be ascertained from examination of the defendants' books, or otherwise.

11. They except to the said master's refusal to find, as requested by defendants, that the actual costs to the defendants of producing the power by which their machinery was driven was not, and could not be, ascertained.

12. They except to the said master's refusal to find, as requested by defendants, that the machine, after the removal of the clamps and one deflecting-plate, ran equally as well as when it had two clamps and two deflecting-plates.

316 13. They except to the master's finding and conclusion that the defendants realized from the use of said machine, as profits, the sum of $9,120.94, or any other sums whatever.

14. They except to the conclusion of said master that the complainants are entitled to recover said sum, or any amount whatever.

March 4, 1873.

KELLER & BLAKE,
Defendants' Solicitors.

(Endorsed:) U. S. circuit court, southn. dist. of New York. Margaret Myers, administratrix, &c., and Eugene S. Eunison, vs. John Dunbar & Jeremiah Hopper. Exceptions to master's report. Keller & Blake, sol. for deft. Exceptions overruled May 5, 1874. S. B. Filed March 5, 1873.

317 At a stated term of the circuit court of the United States of America for the southern district of New York, in the second circuit, held at the United States court-rooms, in the city of New York, on Monday the first day of June, in the year of our Lord one thousand eight hundred and seventy-four.

Present, the honorable Samuel Blatchford, circuit judge.

In equity.

MARGARET MYERS, EXECUTRIX ET AL.
vs.
JOHN DUNBAR & JEREMIAH HOPPER.

This cause having come on to be heard, and an interlocutory decree having been heretofore entered whereby it was referred to a master of this court to take, state, and report the profits made by the defendants in infringing the complainant's patent; and said report having been duly made, whereby there was awarded to the complainants the sum of nine thousand one hundred and twenty $\frac{94}{100}$ dollars; and both parties having, in due time, requested the master to make certain additional findings and to modify and amend said report in conformity with the

318 exceptions, afterwards filed to said master's report; and said requests having been passed upon by said master and said report afterwards, duly filed; and exceptions having been duly taken thereto by both parties, and said depositions having come to be heard; after hearing Frederic H. Betts, esq., on behalf of the complainants and Charles M. Keller, esq., and S. J. Glasson, esq., on behalf of the defend-

ants; it is ordered that each and all exceptions by either party be overruled and that said report be, and the same hereby is, in all things confirmed. And it is further ordered that the compensation of the master herein be fixed, determined, and settled, (including what may have already been advanced or paid to him,) at the sum of five hundred dollars.

And it is further ordered, adjudged, and decreed that the complainants do recover of the defendants the sum of nine thousand one hun-
$9,120.94. dred and twenty $\frac{94}{100}$ dollars, with interest thereon from the 4th day of February, 1873, the date of said master's report to the date of this decree, namely, May 25th, 1874, amounting to the sum of six hun-
319 dred eighty-six $\frac{32}{100}$ dollars, amounting in all to the sum of ninety-eight hundred and seven $\frac{26}{100}$ dollars, and that said defendants
9,120 94
686 32
9,807 26 pay to the master the said sum of five hundred dollars allowed to the master as compensation, less such as may have been paid or advanced to said master by the defendants; and that the complainants have execution or other proper process of the court for the said sum awarded them.

SAML. BLATCHFORD.

320 U. S. circuit court, southern district of New York.

MARGARET MYERS, EX., ET AL.,
vs.
JOHN DUNBAR AND JEREMIAH HOPPER.

STATE OF NEW YORK,
Southern District of New York, ss:

Samuel J. Glassey, of the city of New York, being duly sworn, deposes and says that he is one of the counsel for the defendants and appellants in the above cause, and has prepared the papers on an appeal from the judgment in said cause, made and entered up in the circuit court of the United States for the southern district of New York, on the first day of June, 1874, for (including the master's fees) the sum of ten thousand three hundred and three dollars and twenty-six cents; that all the papers on said appeal are prepared and have been sent to his honor Judge Blatchford for his approval of the bond and allowance of the ap-
321 peal, and deponent expects they will be returned to him by the 31st day of July, 1874, when the time in which the bond to act as a supersedeas should be filed expires, unless further extended by an order of one of the justices of the Supreme Court of the United States; but lest there may be some delay in the receipt of said papers in time to be filed on said 31st day of July, 1874, deponent asks that the time in which said bond may be filed be extended for a few days.

Sworn to bef re me this 29th day of July, 1874.

SAML. J. GLASSEY.

[L. S.] PHILLIP ABBOTT,
Notary Public, New York County.

322 At a stated term of the circuit court of the United States of America for the southren district of New York, in the second circuit, held at the United States court-rooms in the city of New York on Friday, the thirty-first day of July, in the year of our Lord one thousand eight hundred and seventy-four.

Present, the honorable Ward Hunt, associate justice of Supreme Court.

MARGARET MYERS, EX*r*., &C., ET AL.,
vs.
JOHN DUNBAR AND JEREMIAH HOPPER. } In equity.

On the annexed affidavit let the time in which the defendants are required to file a bond on appeal to the Supreme Court of the United States, to act as a supersedeas of the execution in the above cause be entered for five days.

WARD HUNT.

(Endorsed:) Circuit court of the United States. Margaret Myers, ex., &c., et al., vs. John Dunbar & Jeremiah Hopper. Order extending
323 time to file bond. Keller & Blake defts. solr. Filed July 31st, 1874.

324 United States circuit court southern district of New York. In equity.

JOHN DUNBAR AND JEREMIAH HOPPER, defendants & appellants,
vs.
MARGARET MYERS, EXECUTRIX, &C., ET al., complainants & respondents.

The appeal of John Dunbar and Jeremiah Hopper, appellants and defendants above named, respectfully showeth:

That upon the twenty-sixth day of April, 1870, the above-named complainants filed their bill in the circuit court of the United States for the southern district of New York against the above-named defendants, alleging that the defendants had infringed the rights of the complainants therein as secured to them by the extended letters-patent of the United States granted on the thirteenth day of May,
325 1868, to John Myers and Robert G. Eunson, the title to said letters-patent having become vested in the said complainants; and praying for an accounting and paying-over to the complainants of profits and damages, and also that writs of subpœna and injunction might be issued against said defendants, their clerks, agents, servants, workmen, &c.

That said defendants appeared and answered said bill of complaint, and in said answer admitted, upon information and belief, the grant and extension of the letters-patent as alleged and set up in said bill of complaint; they alleged want of knowledge or information, save from the said bill of complaint, whether or not all the requirements of the statute upon such extension had been complied with. They also alleged want of knowledge or information, save from the bill of complaint, whether or not the title to said original or extended
326 patents had become vested in the complainants. They denied the utility and value of the inventions covered by said letters-patent; also that the same had been brought into extensive public use and that the public had acquiesced in or acknowledged the complainants' exclusive right to such invention or any portion thereof; they also *desired* any infringement by them of said letters-patent; they also *desired* that the inventions as set up in the said bill of complaint were the original, true, and first invention of the inventions therein set forth, but they alleged that the same and all material and essential parts of said several inventions had been known and

used by many persons and at divers places, stating where and by whom such knowledge was had.

That thereafter an interlocutory decree was made and entered
327 in the cause sustaining the said patents and adjudging the defendants infringers thereof, and directing a reference to a master to take the accounting prayed for in the bill of complaint; that such accounting was had before said master, who duly reported to the court; that said report was excepted to by both parties, and a hearing on said exceptions was had by the court.

That on the first day of June, A. D. 1874, a final decree was made and entered in the cause, wherein it was in substance adjudged that each and all of said exceptions by either party be overruled, and that said report of said master be in all things confirmed; that the complainants recover of the defendants the sum of nine thousand one hundred and twenty dollars and ninety-four cents, with interest thereon from the fourth day of February, 1873, amounting to the sum of six
328 hundred and eighty-six dollars and thirty-two cents, making in all the sum of ninety-eight hundred and seven dollars and twenty-six cents; and that said defendants pay to the master the sum of five hundred dollars, allowed to the master as compensation, less such sum as might have been paid or advanced to said master by the defendants; and that the complainants should have execution or other proper process for the said sum awarded to them.

Wherefore these appellants appeal from the whole of said decree of said circuit court of the United States, and respectfully pray that the decree of the said circuit court, and the bill, answer, pleadings, depositions, evidence, and proceedings in the said cause may be sent to the Supreme Court of the United States, without delay, and that the said Supreme Court will proceed to hear the said cause anew; and
329 that the decree of the said circuit court and every part thereof may be reversed with costs, and a decree made dismissing the complainants' said bill of complaint with costs, or such other decree as to the said Supreme Court shall seem meet.

Dated New York, July 28th, 1874.

KELLER & BLAKE,
Solicitors for Appts.
CHARLES F. BLAKE,
Of Counsel.

(Endorsed:) U. S. circuit court, southern dist. of N. Y. In equity. John Dunbar & Jeremiah Hopper, defendants, applts., vs. Margaret Myers, ex*r*., &c., et al., complts., respdts. Petition of appeal to Su-
330 preme Court. Keller & Blake, solrs. for applts.

Service of a copy of the within petition is hereby admitted.

Dated July 29th, 1874.

Filed Aug. 1st, 1874.

WHITNEY & BETTS.

331 Circuit court of the United States of America for the southern district of New York in the second circuit.

Bond on appeal to Supreme Court.

MARGARET MYERS, EXECUTRIX, &C., ET AL., }
vs.
JOHN DUNBAR AND JEREMIAH HOPPER, }

Know all men by these presents that we, John Dunbar and Jeremiah

Hopper, appellants, of the city of New York, and Adolphus F. Warburton, of No. 45 East Forty-first street, in said city of New York, and Albro J. Newton, of 370 Union street, Brooklyn, New York, are held and firmly bound unto the above named Margaret Myers, executrix, &c., and Eugene S. Eunson, in the sum of twenty-one thousand dollars, *dollars*, to be paid to the said Margaret Myers, executrix, &c., and Eugene S. Eunson; for the payment of which, well and truly to be made, we
332 bind ourselves, and each of us, our heirs, and each of our heirs, executors and administrators, jointly and severally, firmly by these presents, sealed with our seals, and dated the twenty-ninth day of July, in the year of our Lord one thousand eight hundred and seventy-four.

Whereas, the above named John Dunbar and Jeremiah Hopper have prosecuted an appeal to the Supreme Court of the United States, to reverse the decree rendered in the above-entitled suit, by the judge of the circuit court of the United States for the southern district of New York:

Now, therefore, the condition of this obligation is such that if the above-named John Dunbar and Jeremiah Hopper shall prosecute their said appeal to effect and answer all damages and costs, if they fail to make their plea good, then this obligation shall be void, otherwise
333 the same shall be and remain in full force and virtue.

JOHN DUNBAR. [L. S.]
JEREMIAH HOPPER. [L. S.]
A. F. WARBURTON. [L. S.]
ALBRO J. NEWTON. [L. S.]

Sealed and delivered, and taken and acknowledged, this 29th day of July, before me.

[L. S.] PHILLIPS ABBOTT,
Notary Public, New York County.

UNITED STATES OF AMERICA,
Southern District of New York, ss:

Adolphus F. Warburton and Albro J. Newton, being duly severally sworn doth depose and say that he is a freeholder and resident of the State of New York, and that he is worth the sum of twenty-one thousand dollars over and above all his just debts and liabilities.

A. F. WARBURTON.
ALBRO J. NEWTON.

Sworn to this 29th day of July, A. D. 1874, before me.

[L. S.] PHILLIPS ABBOTT,
Notary Public, New York County.

334 The foregoing bond is approved as to form and amount and the sufficiency of the sureties. July 31, 1874.

SAML. BLATCHFORD.

(Endorsed:) Vol., page . U. S. circuit court. John Dunbar & Jeremiah Hopper, defts. & applts., vs. Margaret Myers, exr., &c., et al., complts., respdts. Bond on appeal to Supreme Court. Keller & Blake, solrs. for defts. & applts. *Keller & Blake, solrs. for defts. & applts.* Filed this 1st day of August, 1874.

335 By the honorable Samuel Blatchford, one of the judges of the circuit court of the United States for the southern district of New York.

To Margaret Myers, executrix of the last will and testament of John Myers, deceased, and Eugene S. Eunson:

Whereas, John Dunbar and Jeremiah Hopper, have lately appealed to the Supreme Court of the United States from a decree lately rendered in the circuit court of the United States for the southern district of New York, made in favor of you, the said Margaret Myers, executrix as aforesaid, and Eugene S. Eunson, and has filed the security required by law: You are therefor' hereby cited to appear before the said Supreme Court at the city of Washington, on the second Monday of October, 1874, to do and receive what may appertain to justice to be done in the premises.

336 Given under my hand at the city of New York, in the southern district of New York, in the second circuit, the 31st day of July, one thousand eight hundred and seventy-four.

SAML. BLATCHFORD.

STATE OF NEW YORK,
Southern District of New York, ss:

J. Orlando Harrison being duly sworn, says that on the 5th day of August, 1874, at No. 742 Washington street, in the city of New York, he served on Margaret Myers, ex'x, &c., the foregoing citation, and at No. 209 West 38th street, in said city, he served the said citation on Eugene S. Eunson, the complainants & respondents in an action in which John Dunbar & Jeremiah Hopper are defendants & appellants, by delivering to and leaving copies of the said citation with said
337 Margaret Myers, ex'x, &c., & Eugene S. Eunson personally, and at the time served as aforesaid, showing to each one of them the foregoing original citation.

J. ORLANDO HARRISON.

Sworn to before me this 6th day of August, 1874.
[L. S.] PHILLIPS ABBOTT,
Notary Public, New York County.

(Endorsed:) U. S. circuit court southern dist. of N. Y. In equity. John Dunbar & Jeremiah Hopper, defendants & applts. vs. Margaret Myers, ex'x, &c., et al, complts., respdts. Citation. Keller & Blake,
338 solor's for appl'ts. Service of a copy of the within citation is hereby admitted. Dated August 3, 1874. Whitney & Betts. Filed Aug. 6, 1874.

339 UNITED STATES OF AMERICA,
Southern District of New York, ss:

I, Kenneth G. White, clerk of the circuit court of the United States of America, for the southern district of New York, in the second circuit, do hereby certify that the foregoing pages, numbered from one to 338 inclusive, contain a true and complete transcript of the record and proceedings had in said court, in the case of Margaret Myers, executrix, &c., against John Dunbar & Jeremiah Hopper as the same remain of record and on file in said office.

In testimony whereof, I have caused the seal of the said court to be hereunto affixed, at the city of New York, in the southern district of New York, in the second circuit, this 8th day of October, in the year of

our Lord one thousand eight hundred and seventy-five, and of the Independence of the said United States, the ninety-ninth.

[SEAL.] KENNETH G. WHITE, *Clerk.*

(Indorsement on cover:) No. 123. John Dunbar & Jeremiah Hopper, appellants, vs. Margaret Myers, executrix, &c., and Eugene S. Eunson. S. New York, C. C. U. S. Filed 12th October, 1874.